00059257

BOMBAY BRANCH

OF THE

Royal Asiatic Society.

00059257

Digitized with financial assistance from

HT Parekh FOUNDATION

An Initiative by HDFC

WITH YOU, RIGHT THROUGH

on 27 November, 2018

R5

A THEORY OF REALITY

A THEORY OF REA

AN ESSAY

IN

METAPHYSICAL SYSTEM UPON THE BASIS

OF

HUMAN COGNITIVE EXPERIENCE

BY

GEORGE TRUMBULL LADD

PROFESSOR OF PHILOSOPHY IN YALE UNIVERSITY

59257

LONDON
LONGMANS, GREEN, AND COMPANY
1899

Copyright, 1899, by Charles Scribner's Sons, for the
United States of America

Printed at the University Press
Cambridge, U. S. A.

TO

THOSE

WHO HAVE THE FAITH

OF REASON IN ITS STRIVINGS

TO KNOW THE DEEPER TRUTH OF THINGS

THIS BOOK IS RESPECTFULLY

AND AFFECTIONATELY

DEDICATED

"Endure
For consciousness the motions of Thy Will:
For apprehension those transcendent truths
Of the pure Intellect that stand as Laws."

PREFACE

The prefatory explanations which I wish to make with respect to the aims and the conclusions of this book are so few and obvious that they may be very briefly dispatched. The problem which it attempts, and the method which it employs, are stated at some length in the first chapter. Its main conclusions — the "Theory of Reality" it advocates — are reiterated and enforced in connection with the critical discussion of each topic; they are given synthetic treatment and summarized in the concluding portions of the book. The faithfulness of its appeal to recognized facts and to the positive sciences has been emphasized by the frequency with which the conceptions and phrases defining man's "cognitive experience" are employed.

There are, however, two or three considerations to which I should like to call attention in this Preface. The first of these concerns the relation in which this book stands to a work published in 1897 and entitled "Philosophy of Knowledge." That work dealt with the problem of man as a knower; and this deals with the problem of the reality known. These two problems, although admitting of a certain amount of relatively independent discussion, are really not unlike two aspects of one and the same all-inclusive object of human critical and reflective thinking. The doctrine of knowledge, then, which was elaborated in the earlier book, is assumed and trusted throughout in the discussions of this book. And, on the other hand, the theory of reality which was discovered

in germinal form by the earlier book is the conclusion elaborated into a system of metaphysics by the studies which this book contains. While I then felt the need, through lack of predecessors among modern English writers on philosophy in the definite line of epistemological research (as I understood it), of the charitable consideration due to the "pioneer," or struggler with the more primitive obstacles in the path, I now ask that this attempt at a theory of reality should be considered in the light of the positions taken by its predecessor and yet companion volume.

I ask also — and surely the request is reasonable — that this book should be credited with making only such claims as its title and whole construction indicate. It is avowedly speculative; it puts itself forward only as affording a tenable *theory* for the solution of those profound problems touching the ultimate Nature of Reality, with which human thought has always contended, and will continue to contend until the end of human existence. It is not necessary here to renew discussion upon the relations in which "theory" — especially of the kind to which systematic metaphysics leads — stands to knowledge, or to faith, or to the life of conduct. I have been chiefly concerned in this book to fulfil the conditions which belong to the establishment of a valid speculative result upon a basis of fact and of science. If obscurities and other faults of style, that are separable from the theoretical handling of such themes, are found abundant here, the author can only say that he has tried to avoid them; and that no one will welcome more than he all improvements by others, both of method and of result.

There is only one other point to which I wish to call attention. The field of general and systematic metaphysics has been so long and so thoroughly cultivated by the profoundest and keenest thinkers that for any writer now to claim, either expressly or implicitly, a considerable share of originality would be unworthy; even the attempt at originality

would be likely either to depreciate the result or to defeat itself. In my preparatory studies for this book, as for all my previous essays in psychology and philosophy, I have faithfully tried to keep my mind in genial communion with the best both of the past and of the present time. The "Theory of Reality" here advocated is, of course, not essentially new; on the contrary, its most important features have been drawn, although with varying details, again and again. None the less this theory is peculiarly my own; and this is because I have made it my own by going to the sources of all defensible metaphysics in the cognitive experience of the race — both that which appertains to the "plain man's consciousness" and that which has been gathered into the different positive sciences. It is, therefore, a not wholly unwarranted hope that the readers of this book will find in it something fresh and new, as respects the way in which the critical analysis of the categories is conducted, and also as respects the manner of making and expounding its final, speculative synthesis.

The few references made to other works give no indication of my obligations to the great number of workmen who have preceded me in the same attempt at a "Theory of Reality." Neither is the fact of reference to any particular author an indication of the extent of my obligations. For some of the names mentioned in the notes are relatively unimportant; others are among the great personages in the history of philosophy. References in *metaphysics* have little or no value as authority; and no man need feel wronged because he has held and published opinions in this field identical with those of any other author, and yet has not been quoted in support or elucidation of them. I wish, however, to say that the chapters in this book which come into closest relations with the physical sciences have, in general, been submitted to friends and colleagues who are experts in these sciences; and that I have been both assisted and reassured by their kindly comments and criticisms. But to mention names here would

create false impressions regarding both their part and that of the author in constructing the views of these chapters.

How preceding works of mine on psychology and philosophy have led up to this volume, and how it stands in the system of philosophical thoughts with the elaboration of which I am concerned, as an important part of my life-work, I have ventured to explain at some length in the closing chapter.

GEORGE TRUMBULL LADD.

YALE UNIVERSITY, *April*, 1899.

TABLE OF CONTENTS

CHAPTER I

PAGE

ON METAPHYSICS; ITS NATURE; ITS METHOD; AND THE PROPRIETY OF IT

The Rights of Metaphysics — Necessary Part of all Philosophy — Agnostic Position untenable — The Objections of Science — and of Literature — or Religion — The Nature of Metaphysics — Relations to Science and to Epistemology — Metaphysics as Interpretation — As a Discussion of the Categories — The Propriety of Metaphysics 1

CHAPTER II

PHENOMENON AND ACTUALITY

The Distinction involved — Psychological Origin of the Distinction — Impossibility of *mere* Appearance — Application to the Nature of the Self — as belonging to all Self-consciousness — Correlation of the two Terms — The Trans-subjective always involved — The Distinction accepted 34

CHAPTER III

ANALYSIS OF THE CONCEPTION OF REALITY

Meaning of the word "Reality" — Its Emotional Effects — Its Wealth of Content — Reality as actual Thing — Not wholly a Product of Thought — Reality as Will — Negative Definitions of the Conception — Positive Definitions of the same Conception 57

CHAPTER IV

REALITY AS AN ACTUAL HARMONY OF THE CATEGORIES

The Relations of all the Categories — They are inseparable in Reality — Analysis of "Being in Space" — All Categories implicate in Each Reality — Yet None analyzable into Any Other — Special Pairs and Groups — The Unity of the Categories — Criticism of different Systems — Proofs of this Unity 84

CHAPTER V

PARTICULAR BEINGS AND THEIR QUALITIES

PAGE

The Conception of Substance — Testimony of Sensuous Experience — The Usages of Science — Genesis of the Conception of Substance — The Logician's View — Idea of Activity involved — Related to the Category of Force — Particular Existence — The Conception of Quality — The Analogy of the Self 111

CHAPTER VI

CHANGE AND BECOMING

The View of Heraclitus — Genesis of the Conception of Change — The Conception as realized by the Self — Impossibility of discrediting the Conception — Change as a System of Changes — Necessity for Principles of Becoming — Reality not mere Mechanism of Change 140

CHAPTER VII

RELATION

Relation as itself related to other Categories — Kant's Treatment of It — Origin of, in Cognitive Judgment — The Kinds of Relation — This Category without Limits — Meaning of, as applied to Self — The Absolute not the Unrelated 160

CHAPTER VIII

TIME

Special Character of Time and Space — The Formal Categories — Negative Criticism of these Categories — Psychological Origin of Time — Scientific Conception of Time — Time both Relative and Real — The Conception of the World's Time — The Infinity of Time — Kantian View of Time as *a priori* — Transcendental Reality of this Category — Time and the Absolute 178

CHAPTER IX

SPACE AND MOTION

Space as a Principle of Differentiation — Difficulties of the true Conception — Negative Attitude insufficient — The Assumptions involved — Essential Nature of the Space-Function — The Category as an Active Principle — Genesis of Space — Consciousness — Scientific Conception of Space — Motion both Relative and Real — Witness of Physics, and of Chemistry — Final Metaphysical Problem — The Being of the World "in Space" 214

CHAPTER X

FORCE AND CAUSATION

PAGE

The Dynamical View of the World — Force necessary in the Realization of all the Categories — Genesis of the Conception — Psychological Objections answered — Force as Substantial Cause — The Conception of Modern Physics — Substitution of the Conception of Energy — Problem of *Actio in Distans* — Energy as Potential and Kinetic — Conservation and Correlation of Energy — The World not a mere Sum in Quantity — Qualitative Character of the Atoms — Bearing of the View upon the Nature of Reality . . . 253

CHAPTER XI

MEASURE AND QUANTITY

Dependence of Science on these Categories — Implied that Nature is really measurable — Genesis of the Conception of Quantity — Application of the Category to Things — Realitivity of all Measurement — The Conceptions of the Euclidean — and of the Modern Geometry — Nature of Geometrical Axioms — Hints as to the Nature of Reality 294

CHAPTER XII

NUMBER AND UNITY

Nature of the Category of Number — Counting the Essence of all Numbering — Genesis and Development of the Conception — Numerable Construction of Objects — The Metaphysical Truth implied — Criticism of the Kantian View — The Conception of Unity — The World as a Unity 318

CHAPTER XIII

FORMS AND LAWS

Universality of these Categories — Reduction to the Conception of "Immanent Ideas" — "Pure Form" and "Pure Law" unmeaning — These Conceptions transcendental — The Analogy of the Self implied — Anthropomorphism of Natural Science — Meaning of the term "Immanent" — Indisputable Nature of this Category — Review of the Meaning of Causality — The Reality of Forms and Laws in the Being of the World 337

CHAPTER XIV

TELEOLOGY

PAGE

Importance of the Discussion — Difference of Positions — Psychological Origin of the Conception — Application to the Self — Objection as Anthropomorphism — Kant's Treatment of Final Purpose — The Biological View — Illustrations — Objections examined — Relation to Principle of Mechanism — Idea of an "Ultimate Aim" — Unity of the World's Course implied 363

CHAPTER XV

SPHERES OF REALITY

Results of preceding Analysis — Significance of the Conception of Selfhood — Can a Self be Absolute? — Answer by the Theory of "Spheres of Reality" — Things as imperfect Selves — History of the Conception of Self — Spirit as Will and Idea — Conclusions as to Reality of an Absolute Self 394

CHAPTER XVI

MATTER

Nature of this Conception — The Physicist's View examined — Experimental Genesis of the Conception — Matter as Mass — Matter as Substrate for Energy — Necessity of Union of the Two — Matter as having Inertia — Metaphysical Conception of Matter — Chemical Conception of Matter — The Atomic Theory — Mystical Conception of Matter 419

CHAPTER XVII

NATURE AND SPIRIT

Need of the Conception of "Nature" — Personification of Nature — Two-foldness of this Asolute Whole — Nature as the Source of Life — Theory of Evolution examined — Nature as a Life — Nature as Will and Idea 452

CHAPTER XVIII

THE ACTUALITY OF THE IDEAL

Necessity of admitting Ideas — All Reality an Actualization of Ideas — This true of Things — The Self actualizes its own Ideas — The Actualization of Ideals — The Ideal Nature of the Absolute . . 473

CHAPTER XIX

THE WORLD AND THE ABSOLUTE

PAGE

Position of Different Metaphysical Systems — General Considerations stated — The Absolute not unrelated — but the Source of all Relations — Relations to the World as Subject to its Object — The Absolute not mere Unity of Force — The Absolute as World-Ground — and as the Principle of all Becoming — Bearing of the Doctrine on Ethics and Religion — The Absolute as the Ground and the Source of Ideals — Ethical Objections to Monism answered — Theory of Identity denied 493

CHAPTER XX

SUMMARY AND CONCLUSION.

Conclusions of Scientific Psychology — from the Physiological Point of View — and as Descriptive History of Mind — Metaphysical Treatment of the Same Subject — Problems raised as to the Being of the World — Possibility and Postulates of Knowledge Examined — All Conclusions summarized in a "Theory of Reality" 529

INDEX 553

A THEORY OF REALITY

CHAPTER I

ON METAPHYSICS: ITS NATURE; ITS METHOD; AND THE PROPRIETY OF IT

THE right to attempt a systematic and detailed treatment of metaphysical problems is, at present, undoubtedly among the most difficult both to maintain and to exercise. And yet the reasons given to justify this difficulty are not, as is often assumed, convincing; nor are its true causes altogether obvious. The use, to their fullest extent, of his powers of reflection is conceded to be one of the most inalienable rights and highest privileges of rational man; there is, indeed, scarcely any other obligation which the thoughtful feel to be so inherently sacred and even imperative. And surely the problems offered by the real existences and actual events known to his common, work-a-day experiences, as well as to the particular sciences, have not the lowest claims to make upon man's powers of reflection. But *these are* the distinctively metaphysical problems.

If we inquire into the particular objections with which the very proposal to establish a metaphysical system is now customarily met, they appear to be partly inherent in the subject, and partly the effect of our modern environment. The weakness and pettiness, the errors and limitations of the human intellect, have always, since philosophy began, been remarked upon; what wonder that they are emphasized anew,

if not exaggerated, in the mind of an age that so eagerly seeks the practical advantages and assured results of the positive sciences? And do we not all feel, in a manner quite blasé, the weight of those burdens which belong to the very constitution of humanity? Who of us has not at some time exclaimed over the arrogance of assuming that it is possible to treat the insoluble riddles of existence to a critical analysis and a complete and authoritative synthesis? Besides, have not certain most distinguished students of philosophy pronounced against the possibility of metaphysics as a system of ontology? The impossibility of extending human cognition so as to have a valid conception of Reality — not to claim more — was the demonstrated conclusion of the incomparable author of the Critique of Pure Reason. Undoubtedly this agnostic negation of knowledge has been much more widely received by his followers than the ethical and religious faith which Kant hoped to establish by his use of the critical method. Nor can we forget that his immediate predecessor in the same method, the keenly analytic Hume, held so poor an opinion of human nature, when employed in ontological speculation, as to commend to the flames all treatises on "school metaphysics."

One may accept or reject the current depreciation of the human intellect — either wholly or partially, and more or less intelligently — without once noticing several of the most important points at issue. As to the more complete justification of any particular view of the nature and limits of man's cognitive powers, we have little or nothing to say at present. The question of *justification* is, after all, an epistemological question; it must be fought to an issue, on grounds of a theory of knowledge. But, if the epistemological problems be set aside for the time being, there are two or three rather remarkable eccentricities of opposition which the attempt at a systematic solution of the metaphysical problems is compelled to encounter. These eccentricities may be brought to

the surface by asking — somewhat abruptly — the following question: Granted that the mind of man is finite, weak, liable to error, limited in capacity; but what of it, in any especial way, so far as the student of systematic metaphysics is concerned? Why select the few thinkers whose unhappy destiny impels them to make the effort to bring into more scientific form the results of profound reflection over the problems of existence, and load upon them the entire odium of that restriction of rationality which is the universal lot of humanity? In many instances they are of all men most keenly sensitive to the inherent and stubborn resistance which metaphysical studies offer to him who pursues them ardently. How limited and relatively helpless the reflecting mind is in the presence of some of the mysteries of Reality, no one else knows so indubitably as he who has done his best to explore these mysteries. Poets and novelists and essayists may speak freely on these problems; why not avowed metaphysicians "of the school" also? Must they alone be weighted down into silence and darkness by that "fear of erring" which, as Hegel so sagaciously says, may be the essence of "error itself"?

The insincerity of that scorn of systematic metaphysics which alleges in its own justification the limitations of human reason is made apparent by two lines of thinking. Both of these lead in pursuit of an explanation for facts of observation. The first of them comes to the conclusion that the rights of philosophizing cannot be admitted and the rights of that branch of philosophy which is properly called metaphysics be denied. In order to show this it is not necessary to repeat here what has been said elsewhere in detail as to the nature of philosophy and of its divisions. Nor is it necessary to pass in review the history of speculative thought, although this entire history illustrates and enforces our contention. Whatever conception one holds of the nature of philosophy, it is not possible to exclude from the sphere of philosophy the critical and systematic treatment of those concrete realities which are

somehow brought to an ideal Unity by all of man's development in knowledge. Let us admit that to philosophize is but to think reflectively — as profoundly and thoroughly as one can. In its more sceptical and critical forms, such thinking subjects to analysis all the assumptions and beliefs, as well as the alleged positive cognitions of ordinary experience and of the particular sciences. As synthetic and constructive, it aims at the harmony of all our particular experiences in some view of the world and of human life that shall be freed from internal contradictions, and that shall interpret and illumine them all. But *that* we are, and *that* things are — this is the fundamental fact, or net-work of facts, which, with its beliefs and assumptions, challenges our reflective powers. And *what* we are, and *what* things are, *what* is the being which we and they share in common, — to tell this in a way that is truthful, rich in content, æsthetically inspiring, and morally helpful, is the goal of philosophical synthesis. But this is also the aim of metaphysical system.

And, in fact, no one has ever philosophized to any extent, whether in the more technical and scholastic fashion or as the most timid and self-distrustful of laymen, without involving in his own reflections some attempt at a theory of reality. *Pure* positivism is impossible for any mind that reflects. Scepticism and criticism that both begin and end in merely being sceptical and critical are intolerable for the human intellect. By this it is not meant simply that they are æsthetically distasteful or ethically unsatisfying; although they are, in fact, both. But the rather is it obvious that positivism puts a strain of self-reservation and distrust upon human reason which cannot be borne for any length of time. Neither is it possible to cultivate epistemology without metaphysics, any more than it is to develop metaphysics without epistemological views or assumptions. We know, indeed, that Kant thought he had proved metaphysics, as ontology, forever impossible. Thus, in his opinion, after the entire task of

Critique was performed, in the three branches of speculative reason, philosophy of conduct, and principles controlling judgments of taste, nothing remained to represent the ancient discipline of ontological philosophy but a collection of those concepts which had survived the critical process. For a vital theory of reality there had been substituted a logical co-ordination of mere forms of thinking. All the life, the power, the interest, of reflective effort had gone into criticism. For metaphysics there remained only a collection of fossils. The bones, carefully cleansed from all the decay of empiricism, well polished with long continued friction from dialectics, and firmly and skilfully articulated, are put on exhibition by the metaphysical systematizer. But where is the man, with his life-blood, and nervous energy, and entire dynamic outfit — ready for commerce with the wilful and baffling concrete realities of daily experience?

Kant did not live to complete his scheme for a systematic display of the results reached by the critical method, as he himself conceived of metaphysics, its nature, and its possibility. He evidently regarded this work as light and relatively unimportant after the task of criticism had been thoroughly done. But if he had accomplished what he, to the last, kept it in mind to do for metaphysical system, his real opinions as to the nature of the transcendental world would not have been a whit clearer or more defensible. For this "*school metaphysics*," — this classified arrangement of concepts that had been shown to furnish the *à priori* forms for all objective cognition — *would not have coincided with his own heartfelt theory of reality.* Who that has studied the critical philosophy thoroughly does not know that its whole structure is pervaded with ontological cognitions, beliefs, and opinions? The private emotional and practical metaphysics of Kant — so to speak — is the very warp of the texture into which he weaves with such astonishing intricacy the woof of his critical tenets. This warp is not a critical doctrine of the categories,

but a collection of æsthetical and ethical sentiments, of threads that mark the projections of a noble and strenuous personality into the being of things, and of unanalyzed assumptions or cognitions. Kant's unrecognized or half-concealed tenets as to the real Being of the World are at once more acceptable to reason and better to live and to die by than his completed catalogue of the categories would have been. For the "faith" which Kant made "room for" has no less of defensible knowledge in it than the "knowledge" he aimed to remove had of rational faith.

And what is true of the results of reflection in the case of the founder of modern critical philosophy is true of the results of all human reflection. Hegel may perhaps justly be charged with a certain "arrogance of reason," which, it is assumed, has of late properly fallen into disrepute. But if the charge be just, it does not lie against this thinker *simply* because he believed in the possibility of metaphysics as a valid theory of reality, or because he made the attempt to realize this possibility in a systematic way. The weaknesses and limitations of human reason in general no more discredit the *Logik* and the *Religionsphilosophie* of Hegel than they discredit the *Kritik der reinen Vernunft* of Kant, or the reflections of the most prominent advocate of agnosticism at the present time. Mr. Herbert Spencer's philosophy, for example, is ontological from centre to circumference and from beginning to end. It is, indeed, one of the most stupendous and self-confident systems of metaphysics which have ever been evolved.

In a word, we cannot consistently maintain and defend the right of man to think reflectively without including in this also the right to attempt a systematic metaphysics, — that is, some preferred rational and unifying view of the world of real beings and actual events. The mere critic in philosophy, like the mere critic in art or in literature, may be quite as arrogant in self-confidence, and as inconsistent in his distrust of other human faculty than his own, as the most pronounced

dogmatist. Indeed, criticism in philosophy without a metaphysical standpoint is impossible. All philosophical scepticism and agnosticism is necessarily ontological. The moment the phenomenalist, the positivist, becomes genuinely philosophical, he indulges himself in metaphysics. It would seem, then, that the place for the consistent scorner of all attempts at a theory of reality lies wholly outside the boundaries of philosophy.

But now the second class of those eccentricities of behavior which characterize certain deniers of the rights of metaphysics becomes apparent. For there are many facts of observation which lead to the following somewhat startling conclusion: voluntarily to abandon philosophy and openly to renounce all the rights of reflective thinking does not relieve one from a certain inescapable obligation to be metaphysical. And here it seems most strange that the real intent and the valid conclusion — if we accept it at all — of the Kantian criticism has been so lost out of the regard of the modern objector to systematic metaphysics. This intent was not to enhance the objections to a rational faith in God and in the freedom and immortality of the human soul. It was, the rather, to render these objections permanently *hors du combat* in the battle that is forever being waged between certain kinds of Idealism, or Supernaturalism, and a common-sense or scientific Naturalism. All the way through the Critique of Pure Reason Kant's sceptical and agnostic positions bear most heavily against the ontological metaphysics of natural science and of the man whose horizon is confined to the things of sense. It is not the believer in God, freedom, and immortality, but the hard-headed denier of these realities on grounds of confidence in his theoretical construction of a system of *mere* things, whose vitals are pierced with the sword of the Kantian criticism.

It is just here that an unprejudiced survey of the facts becomes especially instructive. For the "plain man's" consciousness is always and inevitably metaphysical; it is

generally not sceptical and agnostic. Besides the merit of suggesting a point in the psychological theory of vision, which has already been transcended, this was the only contribution made to human thinking by the Berkeleyan idealism; it insisted upon the truth that, for the ordinary consciousness, the concrete reality *is* just this sensuously envisaged object, and no "thing-in-itself" that must be reached by some process of inference, or by intermediation of some idea. The later Scottish realism did not improve upon, but rather travestied, the view of Berkeley when it began to identify this known reality of the object with the excited *sensorium*. Nor did Kant better matters on this point when he covered up the whole inquiry by taking "data" of sense for granted, and obscurely referring to some dumb and unmeaning "thing-in-itself" as the giver of these data. For, twist the facts as psychology without metaphysics may, it cannot get rid of the truth: *there is a whole system of ontological doctrine concealed in every man's work-a-day experience with things*. Experience itself is transcendent of the subject of experience,—truly ontological. To tell how such experience is possible, this was the problem of the Critique of Pure Reason. But because its answer laid all the emphasis on the analysis of the subject, the knower, and did not share the undying confidence of men that the object, that which is known, belongs in all its complicated structure to the world of reality, this Critique failed to satisfy the demands of consciousness.

That our experience with ourselves and with things *is* complexly ontological, and cannot even be described, much less explained, in terms of subjective idealism, we have shown elsewhere[1] both from the psychological and the epistemological points of view. The more detailed description and speculative treatment of experience as thus ontological constitutes the very warp and woof of any system of metaphysics. What, however, it is now desirable to insist upon is this: in the

[1] In "The Philosophy of Knowledge," *passim*.

very having of cognitive experience, the knower is consciously metaphysical. The knower envisages, or infers, or believes in, his little sphere of realities. It is for him somewhat of a genuine cosmos, an orderly whole. The "World" man knows is made up of *real* things and *real* minds that stand in *actual* relations, that change these relations, that come to be, and continue in being, in space and time; and these present realities constantly influence each other, and they pass away to give place to other realities. To reflect upon all this, or upon any part of it, is to indulge in ontological speculation. For the trans-subjective does not lie in the invisible and the unknown, where Kant placed it; nor is experience with concrete realities to be resolved into a series of appearances, as Mr. Bradley would seem to have us believe. To understand, as fully as man's powers may, the things of human work-a-day experience, the realities cognized by the plain man's consciousness, — this is the endeavor of systematic metaphysics. What strange inconsistency, then, is involved in the enforced acceptance of a half-developed ontological consciousness when it denies the right to attempt the free expansion and more harmonious development of the same ontological consciousness!

Yet more eccentric do certain objections to systematic metaphysics appear to one who observes the facts of modern science. Speculation about the real nature of things, and the insensible causes of events, is nowhere so abundant or so daring as within the domain of modern science. But the proper name for all such theorizing *is* "metaphysics." In the circles where such speculation is most rife, it is also most honored, — but only if it be not called by its legitimate name. Consider, for example, how many "theories" of evolution have arisen and are still advocated among the most advanced of the biologists; or again, how many "theories" have been put forward and are still defended by chemists and physicists as to the ultimate constitution of matter, and as to the forces

and laws which have secured its differentiation into the things of ordinary experience. These theories are by no means wary, not to say modest, in their demands for "Space," "Time," and "Force," and even for a great variety of most curiously and intricately constructed entities. No equivocal theory of cognition disturbs the average speculator upon these subjects, in the boldest flights of his imagination. Few rebukes for excessive trust in the ontological insights or inferences of faulty human reason are awakened among the learned brotherhood in the *scientific* society before which his speculations are discussed.

It would seem, then, that the objections felt to systematic metaphysics must find some other justification than the immanent and irremovable weakness of man's faculties of reflection. For this reason, consistently carried through, would not only limit unduly philosophical speculation, but would discredit all reflection upon the facts of every-day experience and check all scientific hypothesis and theorizing. And, indeed, no fixed distinction can be made between ordinary knowledge and scientific knowledge, or between scientific knowledge and philosophical knowledge. Every attempt at every kind of knowledge assumes to start on terms of good faith with human reason. All alleged knowledge implies ontological judgment and ontological inference. All actual knowledge is penetrated with fragments of metaphysics, is based upon and shot through and through with some theory of reality. Systematic metaphysics is indeed a difficult, and, in its perfection, an impossible attainment. The reasons for this difficulty undoubtedly lie, in part, in the inherent weakness and inescapable limitations of the human mind. But these reasons do not afford sufficient causes why any attempt at thorough and comprehensive ontological speculation should be distrusted, much less derided.

If now attention be turned to certain causes in the present environment of the intending metaphysician, the explanation

of the reception awarded him becomes more obvious. Thorough and painstaking discussion of the problems of existence has never been popular. It is probably not to be expected, even if it were to be desired, that it ever will be popular. It is not sinister or ungenerous to observe, with Eucken,[1] that the common understanding feels toward every system of philosophy that concealed hatred which it feels toward all the higher products of reason. The contempt for metaphysics in the popular mind is akin to the contempt for fine art and refined conduct. This "common understanding" finds no *problems* and no *mysteries* in most of the concrete beings and actual events of life. But some of these beings, and not a few of these events, force themselves upon the attention of the untutored man as pregnant with a meaning he cannot comprehend, or as bearing a message from the invisible to which he cannot find the key. If this common understanding is superstitious it bows itself before the fellow-man who professes to have solved such profound problems, to have unlocked the door that leads inward to such mysterious secrets. The well-trained and reverential mind receives with a cautious gratitude every well-meant attempt to throw any light of truth upon man's pathway. In this day and in our Occidental civilization, however, the common understanding is not consciously superstitious; nor are the minds of the multitude yet trained into a reverential attitude toward those problems of existence which modern science has rendered all the more mysterious and profound. Is it not due to a lack of refinement and of a reverent spirit, at least in part, that men generally have no greater regard for the systematic study of such problems?

We have already remarked upon certain eccentricities of opposition to every attempt at a systematic metaphysics which are met within the domain of the natural and physical sciences. Yet here it often happens that special and extravagant metaphysical theories are most abundant, and most highly prized.

[1] See "Geschichte und Kritik der Grundbegriffe der Gegenwart," p. 38.

The causes for this unfavorable attitude of the modern scientific mind toward "school metaphysics" — to borrow the scornful term of Hume — are chiefly historical. Impartially estimated they may lead one to distribute the blame about equally between the "scientists" and the metaphysicians. On the one side are a very natural overestimate of the value of *mere* collections of facts, a certain confusion as to the extent to which the descriptive history of things affords a complete satisfaction to our intellectual interests, an undervaluation of the part which æsthetical and quasi-ethical considerations are entitled to play in all the growth of science, and, too often, a pitiful lack of training to the faculties which impart true insight, and which must be especially exercised in carrying the race forward to the realization of its highest ideals. On the other side are faults even more conspicuous and irritating, because more opposed to the *Zeitgeist*, although perhaps not less natural and pardonable. How much disregard of the established truths of science, and how much shuffling and playing fast and loose with facts, belongs to the past history of "school metaphysics"! What lack of scientific method — that most fundamental point of agreement between science and philosophy — has been shown by many of the most elaborate system-makers! But who that has read the technical "history of philosophy" needs to be reminded of all this? There is, indeed, little reason to wonder, then, that modern physics, chemistry and biology, and systematic metaphysics, have got into an attitude of mutual distrust and depreciation. But the causes of this attitude are not irremovable. And there are some plain and grateful signs of an approaching reconciliation and readjustment of these so disturbed relations.

The student of systematic metaphysics need not especially take to heart the attitude toward his pursuit assumed by the so-called "literary world." In these days all the froth and scum of human life is rising to the surface in the stream of what is called literature. Any serious reflection upon the

problems of existence, of life and of mind, is rather to be expected from the most uncultured of the men of sober spirit than from the producers and the consumers of these myriads of books. Of all men, perhaps, the genuine devotee to literature most needs the help of a mind that has reflected profoundly upon fundamental problems. On the other hand, the student of metaphysics neglects his own choicest material if he does not recognize the truth that in history and in literature the Reality whose exposition he undertakes makes some of its supreme revelations to attentive and sympathetic souls. For the present, however, he who attempts such a systematic exposition or theory of this reality must probably be content with the neglect or the scorn of the *littérateurs*. And this he can well enough afford to do.

Some of the most persistent difficulties that belong to the present environment of the student of systematic metaphysics are found on quasi-ethical or religious grounds. The long-time subordination of the metaphysics of ethics and of religion to established systems of theology has now been virtually overcome. That lofty patronage of the practical life of morals and of religion which consists in claiming all assured knowledge for science and for philosophy, and in leaving to the practical life only the shifting drift of sentiment, is surely destined, even in its more modern and revised form, to yield unsatisfactory results. Nor can any of the so-called "reconciliations" of science and religion which leave untouched the ontological foundations of both hope to remain permanent. Notwithstanding, the interests of philosophy, on the one hand, and of the theory and practice of morals and of the religious life on the other, can never be separated. Religion is, in its very nature and essence, metaphysical. Its fundamental assumptions arise out of the naïve and undisciplined ontological consciousness. Its faiths are, partially at least, to be explained as the feeling-full and practical solution of some of the profoundest problems of life and of mind. To reflect

upon these assumptions and these faiths, and to attempt to understand them in relation to all the other parts of our complex human experience, is as inevitable a consequence of the possession of rationality as is any other form of reflective thinking.

We are far enough from holding that the study of systematic metaphysics will make men good or truly religious. Nor do we cherish the expectation that, in the millennium, all righteous and pious souls will properly appreciate a *Fach-philosophie*. But to think soberly and thoroughly deepens and enriches the life of conduct and the development of character. It is indeed a species of conduct in which every mind is obligated to take some share. It is also a most important factor and disciplinary agent in the development of character. And in estimating the influences which direct the evolution of the mental and moral life of the race, and which color the deeper-lying parts of the stream of human consciousness, it is likely that the present age undervalues the reigning systems of metaphysics. Ontological speculations are not usually, at the first, impressive phenomena. Many of them, indeed, disappear beneath the ongoing currents of human life, — the commercial, the political, the ecclesiastical, the so-called practical interests, — without leaving so much as a single trace behind. But after all, they are not therefore necessarily inoperative or wholly lost. And sometimes, when they have fortunately found certain receptive minds, and have succeeded in coloring all the thoughts of these minds, they filter silently through a few first disciples into the popular currents of opinion. Thus Plato and Aristotle swayed mightily the lives of many thousands, in the Middle Ages, who had never heard their names; and they have not relinquished their grasp upon the views and conduct of men even to the present day. Thus, too, myriads of the common people are at this moment profoundly influenced by the philosopher of Königsberg, who have rarely or never heard the name of

Kant. And what is so largely true of these great reflective thinkers is true in a lesser degree of all attempts to understand the profounder problems of life and of mind. For such is the relation between these attempts and the theory and practice of morals and religion that the two cannot be divorced.

It is not our present purpose to draw practical lessons from what has just been declared true. Of all theoretical pursuits theology is most dependent upon metaphysics. Of all kinds of faiths the religious are most assuredly, either wholly illusory or fundamentally ontological. Of all professions the ministry can least afford to decry a just use of reason in the pursuit of speculative philosophy. And in the last analysis, ethics feels most keenly the need of a ground in some view of the universe which shall make the sanctions and the issues of conduct lie embedded in the heart of reality. We conclude, then, that the causes of the present opposition to systematic metaphysics which originate in circles whose chief interests are in matters of morality and religion do not constitute a justification. And this is true whether the opposition bears the marks of an *odium theologicum* or of a no less bitter and unreasoning *odium antitheologicum.*

We may now summarize this somewhat lengthy survey of notable facts in the following expression of opinion. It is not particularly difficult to discover some of the chief causes in which originate the peculiar obstacles that must be met by any attempt in the present day at a systematic treatment of metaphysical problems. But these causes do not appear to constitute valid reasons against making the attempt. *The right to have some ontological view that shall, at least, measurably and in one's own opinion, unify and harmonize one's experiences with the world of things and of minds is an essential part of the right to subject experience to the process of reflective thinking.* Nor does there seem any good reason why this right should be allowed to the particular sciences, in their own peculiar domains, without claiming it also for the domain of

all those realities with the particular kinds of which these sciences customarily deal. And when we turn from objections which seem inherent in reason itself to objections which different sorts of people put forth to embarrass the would-be metaphysician, we find even less of force and validity in them. Indeed it is true that the very people who need metaphysics most, often have least care and scantiest respect for it. Nevertheless, it also remains forever true that scepticism and criticism and history and encyclopædia of philosophy do not fully satisfy those cravings out of which philosophy grows; nor do they fulfil all those functions in the exercise of which philosophy consists. Ontological speculation is an essential function of the human reason.

It appears, then, that systematic metaphysics may be—nay, must be—indulged in for the satisfaction of reason and for the support furnished by a ground of reflection to the life of conduct, of art, and of religion. But it is, as we shall see later, the spirit and the method of it which need most careful scrutiny. And, as a matter of fact, it is against a wrong spirit, either obvious or suspected, and against a false or unsatisfactory method, that most of the sincere current objections are raised.

Thus far much has been implied, but little said of a precise sort about the nature of metaphysics. Nor does it seem as though a lengthy disquisition on this subject were necessary, even in a work proposing a systematic treatment of metaphysical problems. Certainly, the philological, historical, or discursive introductions which are common at the threshold of such an attempt have little of real value. The name employed for the thing (metaphysics = μετὰ τὰ φυσικά) is apparently of accidental origin, and is due to the fact that the writings of Aristotle on "First Principles" were given a local position following his writings on natural objects. But before Aristotle, and indeed from the very beginnings of reflective thinking, philosophy was ontological; although more

immediately preceding him, it took the form of a discursive examination of the concepts which sum up, as it were, men's knowledge of things, events, and relations. The important thing to notice in this connection is that *metaphysics should be based on experience with real things and actual events*, and that it should "follow," in docility and yet in free critical spirit, "upon" the particular sciences which treat of real things and actual events. But this is something which philology can neither teach nor help us to attain.

The importance of taking in detail the opinions of others as to the precise definition of metaphysics is also not great. The expression of these opinions differs; the real thing remains the same. We may take our point of starting from Ribot's remark: "Metaphysics is but a most noble and elevated manner of conceiving things." Or we may confess to the impulse of Matthew Arnold when he declares: "We want first to know what *being* is." From these or similar captivating and popular ways of stating the problem and the method of metaphysics, we may pass to such carefully wrought conceptions as that of Mr. Hodgson. According to this author,[1] metaphysics — most dependent and "unfixed" of sciences, yet slowly and surely winning its way — is "the analysis of states of consciousness in connection with their objects; the objective aspect as a whole being summed up in the word 'existence.'" Or if this seems to throw too much emphasis on the psychological and epistemological approaches to the problems of metaphysics, we may for the moment adopt the definition of another author. "By metaphysics we understand the scientific doctrine which, from the sensuously perceptible appearance of things, draws conclusions as to their conceptual essence, in order to gain a true insight into the real being of things in the world, and of the world itself."[2] This definition is, indeed, somewhat too stilted; and it intro-

[1] See "Time and Space," I., pp. 3 f and 72 f.

[2] Löw, System der Universalphilosophie, p. 4.

duces rather prematurely that distinction between appearance *and* reality upon which another more recent treatise on metaphysics has based itself. It may further be objected that we are not as yet by any means sure whether an understanding of the "conceptual essence" will, of itself, afford the desirable insight into "the real being of things." But one can well afford to be lenient in respect of such particulars. And when the same writer expresses the intent of metaphysics to be "a general investigation of that essential being which belongs in common to all things," we clearly recognize the same difficult task as that which is lying before us. Yet again, we may say with Rosmini:[1] "Philosophy is the science of ultimate grounds." It is "the work of reflection carried forward to the discovery of ultimate grounds . . . and things real must be treated in the doctrine of ultimate grounds."

Breaking free for the moment from all historical and technical definition, let us affirm: *To get at reality* — this is the aim of metaphysics. But this is as well the aim of all knowledge, *quoad* knowledge. Yet each particular kind of knowledge, or particular cognitive achievement, has an aim beyond itself; and this more ulterior aim may be expressed as the right adjustment of the Self to the concrete real things of experience. Both these aims — the more distinctly cognitive, and the more purely practical through the cognitive — are pursued in their relations to each other by every man. Men do not deal with "Reality" as an abstraction, a mere idea; they concern themselves with the infinitely varied realities of daily life. The value of these aims is as true of systematic metaphysics as it is of every-day knowledge, or of the more subtle and refined investigations of the particular sciences. The plain man, the man of science, and the metaphysician *a la mode*, are all trying to accomplish essentially the same thing; they are all trying to know reality, — more

[1] Philosophical System: Translated by Thomas Davidson, p. 1 f.

assuredly that it is, and more fully what it is. They are all also trying by means of this knowledge to get themselves and others into more favorable adjustments to the infinitely varied changes in human relations to concrete realities.

For the basic experience of the plain man, of the man of science, and of the metaphysician "of the school," is essentially the same. With all three the data of experience and the aims of life are essentially the same: Here am "I"; there art "thou"; and over yonder, not to be identified with either of us, are the "things" which determine our relations and make for our weal and woe. You and I are connected with each other; the things are connected with one another; and both of us are connected with many, or with all the things — in an intricate net-work of changing and inter-dependent states. I am real; thou art real; the things are real; and there do actually exist manifold relations amongst these realities; while infinitely varied changes are taking place in all. What am I *really?* What art thou? and what are they — those things, that make up, together with us, our known world of reality? And what is this X that somehow guarantees — if we may so speak — and enforces this system of changing relations? Whoever raises any of these problems asks metaphysical questions. Whoever, whether by assumption, by theory, by so-called faith, or by conduct, answers any of them is a metaphysician. He who, having an acquaintance with the history of speculative opinion and taking to his account the many sides of seeming contradiction and the various lights and shadows of judgment, pursues to some systematic conclusion the study of these problems, is a metaphysician "of the school." Schopenhauer is as truly scholastic as Hegel; Herbert Spencer is no less professional than was Immanuel Kant.

Systematic metaphysics is, then, the necessary result of patient, orderly, well-informed, and prolonged study of those ultimate problems which are proposed to every reflective

mind by the real existences and actual transactions of selves and of things. Thus considered it appears as the least abstract and foreign to concrete realities of all the higher pursuits of reason. Mathematics is abstract; logic is abstract; mathematical and so-called "pure" physics are abstract. But metaphysics is bound by its very nature and calling always to keep near to the actual and to the concrete. Dive into the depths of speculation, it indeed may; and its ocean is boundless in expanse and deep beyond all reach of human plummets. But it finds its place of standing, for every new turn of daring exploration, on some bit of solid ground. For it is actuality which it wishes to understand — although in reflective and interpretative way. To quote from Professor Royce: "The basis of our whole theory is the bare, brute fact of experience which you have always with you, namely, the fact: *Something is real.* Our question is: What is this reality? or, again, What is the ultimately real?"[1]

At this point, however, the true nature and legitimate method of metaphysics cannot be understood without placing its speculations in right relations with two other domains of thought. One of these is the domain covered in common by the particular sciences; the other is that provided by a closely allied branch of philosophy. Each of the particular sciences has, indeed, its own metaphysics. Its positive findings as to what *is* real involve certain general assumptions and thought-forms of a universal applicability. Physics and chemistry both assume and demonstrate the truthfulness of certain conceptions of space, time, number, force, relation, law, etc. What the students of these sciences mean by the "truthfulness" of these conceptions is their legitimate and successful application to the particular realities with which the sciences deal. Under these conceptions they know the beings and transactions which constitute their own data; and their growing knowledge is the amplification and correction, in application to concrete realities, of these same conceptions.

[1] The Conception of God, p. 207.

What is true of the sciences which deal with things is equally true of the sciences which deal with minds, or with both minds and things. They all both assume and demonstrate the truthfulness of certain conceptions, in their application to the concrete realities with which they have to deal. Now, then, if this is true of every one of the particular sciences, what is left for metaphysics to accomplish, either as a system of assured cognitions, or as a valid theory of reality?

It is just at the point where the inquiry now started makes its appearance that the ministrations of metaphysics become useful and even imperative. For metaphysics receives these conceptions as they are assumed, applied, and expanded, by the particular sciences, and makes them the objects of a further reflective study. Such reflective study has its justification in the attempt to reach two important ends. One of these is the end of harmony and of unification; the other is the end of insight and of interpretation.

It is natural, and on the whole conducive to the advance of human knowledge, for each of the positive sciences to define as precisely as possible its own leading conceptions, and to endeavor so to extend the application of them, thus defined, as to include larger and yet larger areas of phenomena. As those many interrelations amongst the sciences which are justified by the real connections of their phenomena become more obvious, a certain theoretical unification is inevitable. In this way the world of experience is conceived of as a Unity — as a system of related beings that share in each other's essential characteristics and somehow rest upon a common "World-Ground." But, in fact, no one of the particular sciences, as such, is competent to undertake the perfection of this work of unification. In fact, also, the attempt at such unifying in terms of any one science results in no little misrepresentation of facts, and in the extension of science only falsely so-called. The attempt

to take the part of general metaphysics by the devotees of any one of the particular sciences favors schemes for "picking and stealing" from each other; or it results in gigantic plans for the robbery of entire domains, after the fashion of the barons of the Middle Ages. Is not the age familiar enough, for example, with proposals for a mathematical theory of the universe, which shall reduce all reality under the categories of number and quantity, formulate the equations which *must* avail between minds and spirits, and plot the curve along which the Absolute is destined to move in its endless round of self-creations and self-destructions? Has not physics repeatedly tried to reduce chemistry to the condition of a subject; and have not we psychologists — only, alas! too, persuasively — been promised salvation from our chronic irregularities of growth, if only we will become absolutely dependent branches on the flourishing trunk of modern evolutionary biology?

The work of systematic metaphysics with the categories of the particular sciences, is the work both of critic and of arbiter. The facts admitted and proved by them all, it freely admits. For its business is to reflect upon the world of fact. The generalizations of the particular sciences, and the more precise forms of the leading conceptions employed by them all, it receives with caution and yet with the greatest docility. But to compare these generalizations, these more precise forms of the categories, with one another, to scrutinize each in the light of all, and to subject them to further reflection in the interests of harmony and unification — this is the very essence of the life of metaphysics.

The work of systematic metaphysics is also a work of interpretation. Concerning "Reality" — that is, concerning all real things and minds and all actual events — we ask not only to be assured that it is, and what it is, but we should like to know its meaning. All cognition is, to a greater or less extent, interpretative. I do not know you,

what you really are, unless I have known, and may continue to know, what you mean. It is interpretation of your past expressions which enables me to form the conception of what you really are. And if I cannot interpret the different successive impressions into terms of some consistent theory, I can never know your real being. Your being, so far forth, must remain an insoluble riddle to me. And what is true of minds in their relations to one another is also true of things in their relations to minds. I may state what that chair over yonder really is, in terms of ordinary knowledge or in terms of the sciences of mechanics, physics, chemistry, and so on. But unless I interpret it as an invitation to sit down, and as a promise of safety and of rest in case I so make use of it, I do not know all that the chair really is. In the event of anything coming into relations of knowledge with me, or even being proposed as a possible object of my knowledge, I am intellectually and practically bound to ask the question: What does this particular thing mean? What shall I understand by it? The answer to the inquiry for interpretation, even if it come only in the form of a rational guess or a promising surmise, always throws some beam of light back upon the real nature of the object of cognition. Indeed, man's whole world of reality — and this never means anything more than the complex of beings and events which he knows, with all that seems to him implicated in this complex — is a problem for his interpretation as well as for cognition of *bare* facts and *mere* laws. *It*, too, — the Reality which this world is — needs to have the inquiry as to its meaning raised. And so far forth as this inquiry is raised, and can be answered, so far does man know more essentially and completely what his total world of experience really is.

Now we are far enough from being able to interpret completely the meaning of any single thing, or of any particular event. That stone or clod beneath our feet, that wretched

and narrow mind just encountered on the street, that trifling event of the door-bell ringing or of the snow sliding from the roof, we can never know, under any of the categories or in terms of any of the sciences, to perfection. Whatever it is, and whatever it means, each thing and each event is, and means, far too much for any human mind fully to compass it with cognition or with conjectures. And, of course, the full meaning of the whole world of beings and events, even as they are caught and confined in the net-work of the categories, is far beyond all human comprehension or all the most adroit and daring of human hypotheses. Nevertheless, human knowledge is increased, and human living is made higher and nobler, by the judicious use of interpretation. Even man's guesses as to what is the meaning of the world and of human life, if the guesses are made in accordance with the demands of right reason and in the interests of righteous conduct, may enable him to know reality the better. And it is certain that where the meaning of what is known as actual is even partially and dubiously determined in accordance with the facts of experience, the knowledge of the nature of what is actual is enhanced.

The positive sciences are wont to disclaim that method of investigation which might be called "following the clue of the interpretative idea." Nevertheless they have, in fact and as their history abundantly shows, gained most of all they possess in this very way. But what the positive sciences do for particular classes of facts, and without full consciousness of either method or mission, metaphysics tries to do, with fuller consciousness of both method and mission, for the whole world of facts. This is, indeed, a bold venture. But when it is said, "We want to know what being *is*," does not this include, in part, "We want to know what being *means*"?

The two considerations just brought forward enable us to regard the problem of systematic metaphysics from a somewhat different point of view. Critical and speculative study does, indeed, concern itself with realities, and with realities

only, — that they are, what they are, and what they mean. But its approach to these realities, in their concrete forms of differentiation, their particular relations, their special significances and uses, is not by any means so direct and immediate as that which is demanded for the purposes of our daily living or of the positive sciences. The "stuff" out of which the structure of an ontological theory is to be built is not received raw and at first hand, as it were. It is received after being already worked over by the concurrent intellectual processes of many generations, and after having long-time ago entered into the entire life of man. The subject-matter of metaphysical system is the so-called categories, as far as they are universally applied to real beings and to actual events; it is the forms of human knowledge considered as the forms of reality. This is, in part, what was meant when it was pointed out that the conceptions which the common consciousness and the particular sciences assume to be valid, and find valid, for all concrete realities, need a subsequent work of criticism, of unifying, and of interpretation.

It requires only a modicum of insight to discover that the structure of every metaphysical system, like the work of every individual cognition, — no matter how insignificant and how isolated the object of such individual act of knowing may seem to be — rests upon a foundation of assumption. Metaphysics deals with the forms of all knowledge "*considered* as" the forms of all reality; *ergo* it is inevitably assumed that the forms of knowledge *are* the forms of reality. To discover this assumption, by a complete analysis of human cognitive consciousness; to discover its genesis, and to validate it, as far as possible, for all experience; to reduce the assumption to such proportions that no attack from any quarter can lay hold upon it for its destruction; to exhibit in detail its significance for the life of the knower and for the implied nature of his object of knowledge — all this, and more of the same sort of philosophical discussion, belongs to epistemology. A theory

of knowledge is as agnostic as possible at the beginning; it is designedly and definitively sceptical and critical all the way through. But the very proposal to frame a theory of reality renders impossible and absurd the continuance in the agnostic and sceptical attitude toward human cognition. Systematic metaphysics must enter upon its attempt to treat the categories of reality in a critical and harmonizing and interpretative way, by a complete abandonment of the persistently sceptical and agnostic points of view. Its task is the critical and constructive study of those universal conceptions under which all concrete real beings and all actual events are known by all men; but always *in the good faith that* its results are entitled to a confidence which is proportioned to the range to which such study can be extended, and to the fidelity with which the obligations of such study can be discharged.

To keep epistemological and metaphysical discussions wholly apart from each other is indeed a difficult, and perhaps it is an impossible achievement. And all students of the history of reflective thinking know what dispute has been carried on as to the precedence of epistemology or metaphysics. Shall one venture to construct an elaborate theory of reality before one has thoroughly criticised the human cognitive faculty to see whether so great an achievement is possible for such faculty? From the point of view of the Kantian criticism this order of procedure is illusory and absurd. But to insist upon settling questions of a critique of all reason before making use of reason to extend to the utmost limit our knowledge of reality, is, according to Hegel, like refusing to go near the water until one has learned to swim. At present we do not care which side of these distinguished contestants is in the right upon the point of order. As a matter of fact, we have discussed the epistemological problems in a previous work; and there we have fought it out with sceptical and agnostic objections to the validity and limits of human knowledge. The conclusions there reached render unassailable, in

our judgment, the soundness of that epistemological assumption which is of the very essence of all knowledge, and which is indispensable for every attempt at a systematic metaphysics. The critical theory of knowledge justifies belief in the power of the human mind to know reality, and even to give it a measurably consistent, satisfying, and helpful theoretical determination. On the other hand, the fundamental assumption, as respects its theory of knowledge, made by every attempt at a system of metaphysics is the denial of the conclusion of agnosticism. *The necessary forms of human cognition are not impotencies of understanding, but potencies of reason; they are not limitations of the sphere of vision, but insights into the nature of Reality.*

This right to employ, in courage and in good faith, the reflective faculties so as to validate an attempt to grasp together and illumine all the concrete real things and actual events and relations of human experience in some unifying way, is not the special or exclusive possession of any thinker. Neither is it limited in its application to systematic metaphysics or to "school" philosophy. It is needed to convert all science into something better than a logical arrangement of mere ideas; it is, indeed, the assumption which all positive science makes when it virtually refuses to regard itself as anything less important and æsthetically impressive than a system of cognitions and conjectures touching the nature of reality. So, then, in assuming the positive standpoint of faith in human reason which has been attained by previous epistemological discussion, we are only defining the right which belongs to metaphysics in general. The right we expect to exercise is extended to all others; for it belongs to all others. It is the right to transcend the sceptical method, to leave wholly behind the agnostic point of view; and without further reference to sceptical and agnostic objections and inquiries — whether legitimate or illegitimate, reasonable or absurd — to push reflection as far as possible toward a consistent and satisfactory Theory of Reality.

Little beyond what has already been implied need now be said concerning the method of metaphysics. Here as usual, while method is of much importance, discussion of method is of comparatively small value. Indeed, the method of systematic metaphysics is quite closely defined by the very conception of the nature of systematic metaphysics. All cognitive experience is of, and about reality. It is *real* things, *actual* events, and *actual* relations, of and about which men have and affirm knowledge. This is true whether such knowledge is ordinary or scientific or philosophical. Inasmuch, then, as systematic metaphysics aims at a theory of reality, it must ever face this cognitive experience; and as it faces experience, metaphysics reflects upon that which it faces. Nothing can easily be more false and misleading as to the proper way of arriving at metaphysical truth than to follow literally the injunctions of the German writer who declares: "Experience must be subordinated to the concept. . . . Experience can give us only perspective pictures; and, therefore, only what belongs to the inner world." [1] But metaphysics follows experience with the reflective method, and in the full confidence that experience *does* give us something more than "perspective pictures," — namely, a trustworthy knowledge of the real world both of things and of minds. In the use of its method it recognizes, however, the pertinency of Boyle's way of stating the case: "When we say experience corrects reason, 't is an improper way of speaking; since 't is reason itself that, upon information of experience, corrects the judgment it had made before." *The recognition and the rationalizing of all our experience with reality is the method of metaphysical system.*

The relation in which systematic metaphysics places itself toward the particular sciences has already been indicated as something belonging to its very nature. But the same relation also determines the method of metaphysics. It is receptive toward all the principles and conceptions of these sciences, so

[1] Teichmüller, Die wirkliche und die scheinbare Welt, p. 233.

far as they deal with the particular kinds of reality. But it is critical of all these principles and conceptions; for its purpose is to determine the limits, the rights, and the connections, of each of them in its relation to all. And thus metaphysics becomes in its aim and conclusions synthetic and constructive. *For it aims to harmonize and interpret the assumptions and the conclusions of the particular sciences in the light of the highest and most comprehensive reflection.*

Metaphysics then employs the critical and constructive method in its study of the universal forms of knowledge — the so-called "categories" — in no merely formal way. It is not its ultimate purpose simply to catalogue the categories, to know what they are, and to attach more precise meanings to them when their names are called. Its purpose is rather, by accepting them as the universally recognized forms of concrete realities, to reflect upon them so as to frame, if possible, a consistent and satisfying theory of reality.

In concluding these introductory remarks it may be said that the propriety of any particular attempt at systematic metaphysics depends upon a number of particulars. That such attempts will be made from time to time is as certain as that men will continue to reflect upon the problems offered by their own lives and by the environment of the universe in which these lives arise and pass away. Some roots in human nature which make metaphysics persist in spite of popular neglect, and notwithstanding the pride of positive and definite scientific knowledge, must certainly be allowed in order to account for the recurrence of these attempts. Surely they are not undertaken for the material profit which is in them. Nor do we believe that the remark of Riehl goes very deep into the truth when he ascribes metaphysics to "a natural hankering of man after the measureless and the illimitable." But whether any particular individual, with any measure of propriety or success, shall undertake so thankless a task, it depends upon himself to judge in the first instance, and in

the last upon his contemporaries and his successors. Above all he should make up his mind to keep himself free from what the Greeks called κροκυλεγμός (dealing in trifles) and from ψυχρότης (ambitious conceits).

The reflections just made may fitly lead to confession, to apology, and to appeal for indulgence. The following attempt at a sketch of an ontological theory does not pretend to be either infallible, or complete, or even conclusive from every point of view. It is, of course, nothing more important than certain opinions, about a set of very profound and difficult problems, expounded in an orderly way by an individual thinker. That one's peculiar standpoints and views on special problems, and especially one's ethical and religious faiths and tendencies, should have an influence upon one's general ontological theory, is probably inevitable. Indeed, although metaphysics professedly deals with the universal and the unchanging, every particular instance of such dealing is the product of the individual and of his age. Hence there is peculiar need that every man who, anew and for himself primarily, and then for his day and generation, approaches these problems, should orientate himself — intelligently and self-consciously as it were. How conscientiously any author has done this, it is not becoming for him to explain; how successfully, it is not becoming for him to judge. Enough that the result be received as the contribution of a single mind to the increase of the general stock of reflective thinking.

But, however any thinker may resolve to be independent and uninfluenced in his metaphysics by prevalent views, the *Zeitgeist* will doubtless have certain conceptions to emphasize and thoughts to express. Even the few teachers for all ages are also the children of their own age. And for the great multitude of students of metaphysics, what individuals think about these universal and eternal problems is (however deftly concealed, or expressed in idiosyncracies of language,

or "made over" for the season, like the black silks which our grandmothers used to wear) little else than the thought that is the current opinion of their age. We say of *their* age; and this may mean of the particular coterie to which they belong, — a selected specialization of the spirit of their time.

There are two comprehensive conceptions which seem to us to be shaping the thought and the conduct of the present age. These are, of course, not new, either in their total complexion or in any of their most important factors; otherwise they could not be so comprehensive and influential as they are. But they are receiving new and enlarged meanings; they are made to serve more extended and illumining uses. These are the conception of Evolution, of the principle of becoming, and the conception of Self-hood, especially as having its roots in, and its reaching out into, social connections. What wonder, then, if our theory of reality finds itself compelled to regard all the concrete being of things and of minds as a process of becoming, somehow related (and we will wait to choose our words, whether "creation," "manifestation," "revelation," etc.) to the Being of an Absolute Self?

And now one can easily anticipate objections which it is of little use at present trying to remove. Let it be confessed, at once and for all, that our theory of reality is anthropomorphic. But so is all science, and so is every form of philosophy. So also, of course, is the most ordinary and yet most fundamental cognitive experience. Metaphysics, we repeat, is severely critical — but not of the faculty, or power, of cognition; it is critical rather of the actual results of cognition. It is indeed only of all things and transactions *as known to us* — finite intellects, prone to deception, groping in darkness, in restricted commerce with things of sense — that metaphysics can claim to treat. But the only things that can exist *for us* are the things known *by us*, and the things somehow implied in them. We will lay aside for the time any mixture of half-insane scepticism, and take ourselves and our fellow-men with courage

and with good faith. We will study the universal and eternal forms of man's knowledge of things as the universal and eternal forms of the things known; and we will see whether we cannot in this way get a grasp upon some supreme and ultimate truths to be learned about the universal and eternal nature of Reality. We will begin and continue our search for truth with confidence in theoretical reason; all the way we will not suffer ourselves to become *mere* critics of the cognitive faculty. For from the sole standpoint of Kant's *Kritik der reinen Vernunft* no man can so much as invest with any satisfactory content the words all men agree in using to express the indubitable common experience with the real things and the actual events of the world.

"Man is the measure of all things:" this is a very old saying; science has much impugned it of late; its falsity or truthfulness depends upon how it is understood. But if, rightly understood, it is to be called rationalism, then no dogmatism can be so little rationalistic and weakly critical as to avoid being forced to this conclusion; if, on the other hand, it is to be called dogmatism, then no rationalism or criticism can be so little dogmatic as to avoid taking refuge — however covertly — in this assumption. The meaning in which we accept the ancient dictum has been defined in detail as a philosophy of knowledge. The way man does actually measure all things and embody his measurements in a system of cognitions must now conduct us to a theory of reality. The traditional metaphysician — to adopt Hegel's figure of speech — paints his entire picture in shades of gray (*Grau in Grau*); and this, as he thinks, is because the metaphysician has upon his palette only the "abstract essence of the categories" (*das ganz Abstracte der Begriffe*). If this our metaphysical picture has in it a bit of vivid coloring here and there, it will be because we hold that the categories are significant as forms of life in both the subject and the object; and that every concrete fragment and separate

event is a factor, and a pulsation, significant of something more than a mere reign of law, and more than a logical arrangement of ideas and thoughts. *For the total interests of humanity demand a Theory of Reality which shall be, on the one hand, firmly founded in cognitive experience, and on the other hand, well adapted to serve all man's practical needs.* The construction of a tenable and comforting philosophy is a work of good-will; it is a beneficent deed, a gift of blessing to humanity.

CHAPTER II

PHENOMENON AND ACTUALITY

At the very threshold of every ontological structure stands a distinction which must somehow be recognized, but which, by the precise form given to its significance, exercises an important influence upon the structure itself. The terms in which this distinction has been embodied are somewhat variable, while its essential relation to metaphysical system has remained the same. In this way several pairs of words have arisen and become more or less fixed in the terminology of philosophy; such are the Heraclitic and the Eleatic contrast of Becoming and Being, the Platonic contrast of the sensible thing with the Idea of which it is the shadow, the Kantian thing as an object of knowledge and the "Thing-in-itself," or the cognizable concrete realities and the unknown Real. In similar manner has Mr. Spencer contrasted his one Unknown Force, with its own multifarious "manifestations." From Parmenides to Mr. Bradley, though with different shades of meaning and with different conclusions drawn from the distinction, man's total experience has been customarily divided between "Appearance" and "Reality." Noumenal and phenomenal, actuality and manifestation, *die wirkliche und die scheinbare Welt* — these and similar expressions involve, in differing ways and from different points of view, essentially the same thought.

The philological and historical examination of the conceptions embodied in such terms as those just mentioned is interesting, and may be made to throw some light upon the

nature of metaphysical problems. A criticism of the various shades to the distinction upon which the conceptions are based is of more value. But to approach in either of these ways the theme suggested by the title of this chapter would not greatly further the main purpose of metaphysical discussion. The end of such discussion is a theory of reality that shall harmonize and give significance, so far as human powers of reflection can, to all the work-a-day as well as to the scientific cognitions of men respecting concrete real things and actual events. But in the attempt to do this we are met by opinions — as old as philosophy itself — which regard this reality, about whose nature we are seeking a theoretical construction, apart from, or in sharp contrast with, our work-a-day and our scientific experience. It seems, then, as though we could not get at "genuine" Reality, in order to examine studiously its essence and its import, until we have separated it from an admixture of mere appearance, an envelope or shroud of the phenomenal. To avoid the distinction appears to be equivalent to a dismissal of the entire problem of ontological speculation, as this problem has been conceived and cultivated during all the generations of thinkers in philosophy. But to admit the distinction in the form customarily given to it is likely to end in the virtual confession that this problem is not only insoluble, but even profitless and illusory.

We accept, then, the distinction between Phenomenon and Actuality (or whatever other pairs of terms one chooses for the expression of a similar result of reflective thinking) as essential to be observed for the student of systematic metaphysics. But the way in which the distinction is to be made and carried out must be critically examined. To determine its psychological origin and its ontological import and value is an indispensable part of an introduction to our further task.

The psychological origin of the distinction between phenomenon and actuality, or between "the apparent" and "the real," *is to be found in the process of knowledge itself* — as a

development both in the life of the individual and of the race. This distinction is, indeed, the necessary result of all growth whatever in reflective thinking, and even of the exercise of cognitive faculty. While the primary acts of knowledge are forming in the infantile stream of consciousness no such distinction is manifest or actually made. *Only the knower heeds the difference between what is and what merely seems to be.* For the infant, the actual is only phenomenal and the phenomenal is the only actual. We whose very life blood is tinged with this distinction, who have so often been deceived by ourselves and by others and by things, cannot put ourselves in imagination back into that naïve and trusting infantile consciousness. But all our science of its states shows us that it is impulsively active and indiscriminatingly receptive. It does what it is psycho-physically moved to do; and it takes what of experience comes to it. It is neither sceptical, nor critical, nor agnostic; and so long as it knows neither its Self nor any Thing, it is incapable of making any distinction resembling that between appearance and reality.

With the development of the knowledge of self and the knowledge of things, the distinction which philosophy has so often misunderstood and abused becomes inevitable and actual matter of fact in every human consciousness. This distinction is probably first emphasized and worked into experience by commerce with external things. For these objects are known to all men by various senses, under conditions that are seldom twice precisely alike, and in an almost infinite variety of aspects. But whenever and however known, they are likely to be of important practical interest; and they mislead us in a practical way quite too often to permit us to place an unwavering confidence in our knowledge of them — what they are and what they will do. The child who expects pleasure from grasping the candle, or from tasting the pepper, or from caressing the ill-natured dog, or from snatching the older boy's toy, or from stuffing himself with

sweets, gets his early lessons in the distinction that things are not always as they seem.

This same lesson in making distinctions between appearances for practical ends, received in essentially the same way and entitled to no less and no more of significance, is what the particular sciences are learning from day to day. In their learning of the lesson, however, the distinction becomes something other than that which it is for the child; it ceases to be any longer merely the correction of one judgment made upon a basis of one class of sensuous experiences by another judgment resting upon another kind of sensuous experiences. While it does not wholly lose its more childish and practical significance, it becomes a distinction between the obvious and sensible qualities and changes of things, considered as effects, and those hidden, inferred powers and changes which science investigates as the causes of these effects.

In the one case, the thing or the event cognized in a judgment made on grounds of observation by one sense may be said to be only "apparent" as contrasted with the same thing or event cognized in a judgment made on grounds of another sense. In the other case, all judgments made on grounds of observation by the senses may be called "apparent" as contrasted with those more general judgments which science feels itself competent to pass upon the causes of all sensuous judgments. From the one point of view, the stick which seems bent in the water is the appearance; and the stick which we plainly see not to be bent when it is taken out of the water, is the actual stick. From the other point of view, the flash of lightning or the spark which seems to pass, and actually does pass, from A to B is the phenomenon; the rapid undulation of the ether, which is now electricity and anon is light, is the cause in reality of the phenomenon.

But, plainly, man's reflective thinking cannot stop at this point in its distinction between appearance and reality. It

cannot continue uncritically to assign the data of sense-perception to the former and limit the application of the latter to the construction of rational hypotheses. To recur to the example just mentioned: we must go on to inquire, What is the superior actuality of this hypothetical entity called ether, and of the theoretical movements which are assumed to take place in it, but of which no direct witness by the objective senses of touch or of sight can be obtained? Why must not ether, and waves in ether be considered as pure conceptions, as only our human conjectures about what kind of a being, *if it existed* and behaved in such a way, *might well enough* explain to our intellects the phenomena witnessed by our senses? Let us, then, return to solid ground of standing; and is not such ground found only in the phenomena themselves, the facts of actual sense-experience? The things I perceive *are* the realities; the conceptual explanations given of them by the man of science are only appearances — made credible for the time being by the conjectural activities of some human intellect. The actual facts remain, for all time and all persons, essentially the same; but who knows what new kind of an entity, with novel but equally conjectural modes of behavior, may some day be substituted for this nineteenth-century demigod — the so-called "ether"?

In relief from such see-sawing between the actuality of each phenomenon, which is debased by calling it *mere* appearance, and the conceptually correct seeming of that which gets its only valid claim to reality by usurping the title from the phenomenon, the reflective thinking of man may be driven in either of two directions. One of these is the path of complete scepticism leading to agnosticism. But our critical theory of knowledge has already excluded us from this path; and to pursue it anew would bring us to no tenable theory of reality. The other path seems to conduct the metaphysician where phenomena and their conceptual explanations must both alike be considered as mere appearances. To this condition of un-

trustworthy seeming all known things and all their scientific explanations are then reduced. But over against them — grand, impressive, yet inscrutable and of little practical significance — stands the Unknown Real, the unchanging One that is the foil of the ceaseless process of Becoming. Reality itself now *appears* (*sic*) in the garb of an abstraction, — an empty apple of Sodom which is offered to man to appease his ceaseless hunger for an object of knowledge that is freed from the limitations of the phenomenal.

It is of little use to seek further light on the distinction between "appearance" and "reality," as applied to external objects, until we have also considered how a similar distinction arises in the sphere of self-consciousness. In this sphere, too, the growth of knowledge forces all men to distinguish between the phenomenal and the real; but the distinction is not precisely the same, nor is it made on the same grounds, as when applied to things. Touching the actuality of every phenomenon when the reference implied in the question is to some conscious state of its own, the mind is never in any doubt. From the point of view held by this reference, *phenomenon* means nothing less than a self-cognized fact, which "appears" at all only on the condition that it is an actual event in the real life of the being whose states are all similarly cognized facts. About this form of a distinction also, to be sure, the infant does not concern itself. For it there is no possible question as to what merely seems to be, and what actually is its own. As yet no cognitions of Self or of Things have taken place. But let the development of self-consciousness, and the consequent growth of self-knowledge, be supposed; and even then the self-conscious states cannot be divided into two classes, into appearances and realities, as the distinction indicated by these words applies to things.

The conclusion just reached needs further attention. I may doubt whether that particular tree which I seem to see over yonder has any actual (or so-called "trans-subjective")

existence; whether what it is — color, extension, shape, location in space, etc. — be not merely as my object, an *appearance to me* of that which is *not itself real.* The tree may certainly be considered as an illusion, an hallucination, a phantom of my brain, a figment of my imagination; or it may for the moment be regarded as a phenomenal real, the object constructed by the constitutive activity of my intellect, functioning after the forms of the twelve categories. But the moment I take the point of view of self-consciousness toward this object of mine all such distinction between "it" as phenomenon and the same "it" as reality becomes impossible. Seeming to see a tree and really seeing a tree are, from the point of view of self-consciousness, alike actual and alike phenomenal. For the distinction between an actual tree and a merely apparent tree is one which carries us beyond the point of view assumed by the observer who stands in the stream of his own consciousness. My object tree can be spoken of as "mere" phenomenon only in this sense; it can be regarded as so completely dependent for its existence and its continuance upon me as a knower as to have no existence in the form of an object for any other self, and no influence or place in the world of external things. But as *my* object, it is no more phenomenal and no less real than are all things known to me. Every object and every state is as really my object and as much an actual event in my stream of consciousness as is any other.

The distinction as to kind of state arises indeed, in self-consciousness. But this, too, is a different distinction from that between the phenomenal and the actual as applied to things. I may mistake my hallucination for my perception, my imagination for my memory, my involuntary impulse for my deed of free will. I may be deceived as to the character of my motives, as to the grounds for my conclusions, as to the sanity of my hopes and aspirations. But all these actual events in my consciousness, when regarded in respect of their claims to existence

as expressive of the reality of the being which I am, stand on the same level of fact. They may all be regarded as purely mental phenomena; but they are all also parts of the reality I call my Self; because they are all actual events, referable alike to the one subject of them all. In man's experience with things, what is actual to one sense is mere appearance to another sense, or to the same sense under other conditions; what is real to all the senses is properly spoken of as mere appearance from the point of view of the explanatory intellect; and even the categories themselves — those very forms of the objectivization of sensuous impressions without which no knowledge of concrete realities can take place — may be treated as belonging to the world of appearances only. So Kant treated them. But the moment we enter the world of self-contemplation the import of any such distinction is changed. We reaffirm that all mental phenomena, as such, are equally actual psychical events; and that they all equally belong to that reality I call my Self.

But further reflection soon reveals an important application of the distinction between the phenomenal and the actual which undoubtedly maintains itself in the sphere of self-consciousness also. Indeed it is, in some sort only on the basis of this distinction that self-knowledge develops. My conscious states — so far at least as they fall under the *Blickpunkt* of self-consciousness — are *phenomena to me*. Every act of self-consciousness means this: namely, that so qualified, as it were, do I actually seem to myself to be. Sometimes it is as having a pain, and sometimes as having a pleasure; sometimes as beholding an image of the past, and sometimes as taking an outlook toward the future; sometimes as forming a plan touching my daily business, and sometimes as framing a thought about some invisible and spiritual entity. Each particular state passes quickly away and is succeeded by another. And so I speak of them all as a life that is in a constant flux, a succession of psychoses, a flowing stream of

conscious states. Many of them I have forgotten; and of those I remember, which were once so vivid and absorbing of interest, how many are now like the pale, trooping shadows of a more than half forgotten dream! Surely my very being is all, when taken together, and it is in each and every one of its portions, a series of appearances not worthy the name of a being truly real.

And yet my very ability to regard each and all of these psychoses as phenomenal is dependent upon my consciousness of something within the same sphere which must be thrown into a marked contrast with the fleeting states. This something is I, — my Self, as the saying goes, — the one subject of all the states. These self-conscious states are both real as events, and are appearances as well, only because their very nature consists in their being, so to speak, brought under the eye of the Self, and *appearing to it as its own states.* Their existence lasts only so long as their appearance lasts; when they cease to be in evidence before the subject of them all, they cease really to be. In other words, the reality which the conscious states have is not different from their actual appearance as events in the stream of consciousness. But even the lowest form of a genuine self-consciousness implies something more, and more permanent, which is characteristic of every one of these self-conscious states. This something more is the being which is the subject of the states. What further this something is, and in what sense its existence is real, permanent, and universal, as belonging to all the phenomena, it requires a scientific study of self-knowledge to say. It is enough for our present purpose to call this something the *Ego*, the Self, or the common subject of the conscious states.

This, then, is the distinction between phenomenon and actuality which is embodied and emphasized in every act of self-consciousness. It is the distinction between the conscious process or state, which exists only as it appears to the Self or subject, and that same Self regarded as the subject of

all the conscious processes or states. *They* are, relative to it, appearances or phenomena; but IT is the one permanently existing and real subject of all the phenomena. My conscious activities or states are mine; they are actual events appearing in that "stream of consciousness" I call my life; but I am the real being whose activities or states they are; and to whom — speaking in a permissible and pregnant figure of speech — they all appear. And to no other being do *they* appear; to all other selves, if my conscious states are made known at all, it is through certain physical signs which appear to these other selves as phenomena of external things.

A study of the psychological origin of this group of philosophical conceptions reveals, then, this important truth: *In the sphere of self-consciousness the distinction between reality and appearance is valid only as a distinction between the Self and its conscious states.*

Further exposition of the psychological origin of this distinction between the phenomenal and the actual, both as respects things and as respects the self, does not concern us now. How it comes about that the total content of every portion of the stream of consciousness which gets conscious recognition divides itself into state or process and subject of state or process, is a problem in introspective and speculative psychology. What that can be justified by an appeal to experience is meant by speaking of the self as a real and permanent being, which stands in such relation to its own individual experiences as forbids its being identified with any one of these experiences, and as requires that it should be regarded as in some sort the possessor of them all, — this belongs to the metaphysics of mind to discuss. What has already been shown is sufficient for our present purpose. The conclusion may be summed up as follows: In its application to things the distinction between the phenomenal and the real is fleeting, evanescent, elusive; but in its application to the self the meaning and limits of the distinction are perfectly clear.

The conclusion which has just been reached from the point of view of psychological analysis is amply enforced by a survey of the history of philosophy. In the metaphysics of nature, and as to the valid conclusions of reflective thinking about the essential being of things, the line of cleavage between the phenomenal and the real has been variously drawn by different philosophers. With some, as with Parmenides of old, the world of sensuous changes is throughout mere seeming; the unchanging One is the alone real. With others, as with Heraclitus of old, the changes themselves, the sensuously known processes of Becoming, are the only actual; the conceptually fixed and unchanging has no real existence; it is the mere construct of the human mind. For one school of thinkers, only the object of reason, the Idea, is entitled to be called actuality; for another, only the objects of sense. All students of the great master of criticism know how pre-eminently unsatisfying is the answer which Kant gives to any attempt consistently to fix the meaning of this distinction, so fundamental to his entire system of thinking. In the Transcendental Æsthetics the real is admitted into our sensuous experience as the unknown cause of our having sensations at all; in the Transcendental Logic all the most assured and scientific knowledge of real things is reduced to the object-making activity of our understanding and so to the phenomenally real; in the Transcendental Dialectic the highest ideas of reason are convicted of being nothing but a *Logik des Scheins*. In many places in the Kantian writings, the very thought of trans-subjective existence seems to be accused of inherent falsity; *Ding-an-Sich* is a purely negative and limiting conception, like the side of the pond against which the blind fish strikes. And yet everywhere, in all three Critiques, the author introduces glimpses of a Reality that is underneath and behind all concrete and phenomenal realities. We may not know what this *Ding-an-Sich* is; but Kant himself is sure — at least in a practical and æsthetical way — and he is

interested in revealing it to the man of faith. And finally we are plainly told that we cannot be rational unless we supply an "intelligible substrate" for nature, both external and internal.[1]

It is this inability to avoid the conviction that nature as man knows it, is the manifestation of a transcendental reality, coupled with the inability to define the latter or to fix clear limits to the distinction involved in this way of looking at nature, which offers one of its most interesting problems to every metaphysical system. It is the same inability which constitutes the pathos of the figurative and poetical ways of applying to the external world the very conceptions of phenomenon and actuality. But it is the conviction that this world of appearances is, in this regard, of our own kindred, which gives to such expressions the charm and the sublimity they certainly possess. "Perhaps nothing more sublime was ever said," remarks in a foot-note the author of the *Critique of Judgment*, "and no sublimer thought ever expressed than the famous inscription on the temple of Isis (Mother *Nature*): 'I am all that is, and that was, and that shall be, and no mortal hath lifted my veil.'" And the same note tells us how a Professor of Natural Philosophy at Göttingen (Segner, 1704-1777) "availed himself of this idea in a *suggestive* vignette" in order to inspire his pupils with a "holy awe." Who does not recognize, with æsthetical emotion, the truthfulness of Goethe's series of exclamations with their following inquiry? —

> "How all one whole harmonious weaves,
> Each in the other works and lives!
> . . . . . .
> Majestic show! but ah! a show alone!
> Nature! where find I thee, immense, unknown?"

For the solution of this problem offered by the distinction between phenomenon and actuality, in a preliminary way and

[1] Consider the course of the argument in solution of the "antinomy of Taste," "Kritik d. Urtheilskraft," I., ii., §§ 57 ff.

so far as the distinction offers an obstacle to all attempts at a positive and yet speculative treatment of the whole field of external reality, two critical considerations are sufficient. These concern the nature and the validity of this distinction when it is regarded from the metaphysician's point of view. This point of view is certainly an advance upon that from which we have already surveyed the psychological genesis and application, both to Things and to Self, of the same distinction. This advanced point of view must, however, remain faithful to the facts brought before it by psychological analysis. Ontological doctrine, so far as it is dependent in any way upon this distinction, requires some work of reflective thinking which goes beyond psychology; but it cannot contradict or neglect the data of psychology. On the contrary, it must build upon these facts as its own secure foundation.[1]

As to the nature of the distinction between phenomenon and actuality, so far as this distinction affects the problems and the method of metaphysical system, the following critical consideration is chiefly important. *The two terms of the distinction are always correlative, mutually related, reciprocally dependent for their significance and for their application to every class of cognitions.* A phenomenon that is not *of* and *to* some real being is inconceivable. A reality that is not phenomenon *to* itself, or *to* some other being, is unthinkable. Both "the apparent" and "the real" represent merely negative conceptions, so long as we try to state them in terms which do not involve each the other; as positive conceptions, filled in with a wealth of meaning derived from actual concrete experiences, they necessarily implicate each other. Meaning

[1] It seems strange, indeed, to the thoughtful student of history that, while the distinction of "Appearance" and "Reality" is so old and so universal, the grounds, nature, and validity of the distinction itself have received little attention. Systems of philosophy have been built up in the effort to justify it; or they have divided on fundamental doctrines according to that single conception of this couple upon which the emphasis was laid. The distinction has given the title to metaphysical treatises, both ancient and modern. It has itself received comparatively little critical treatment.

can be given to neither of these conceptions, without involving the meaning which one finds one's self forced to give to the other of the two.

It follows, then, that the phenomenal and the actual, or the world of appearance and the world of reality, cannot be distinguished as though they were mutually exclusive spheres. We have already seen that the phenomena of the entire mental life, regarded from the psychologist's point of view, are all alike actual events in the one stream of consciousness, — all referable, as processes or states, to the one real subject of them all. *I* am not to be set over against my own conscious processes, as they appear to me, and thus made more truly real by being separated from them. And strictly speaking, the same statement is true of all objective and physical phenomena as related to that world of reality which is recognized as "not-ourselves." Apparent things and real things do not belong to two mutually exclusive kinds, or spheres, of being. In the realm of so-called Nature, too, the appearances are not something that can be drawn off and wholly separated from the reality; and that which is real cannot be construed as an unknown *Ding-an-sich* that never to any one, nor in any manner, makes itself apparent. Or, to follow up the figurative and poetic way of expressing the truth, let us say: When men bow their heads at the temple of Isis and hear their "Mother Nature" declare, "I am all that is, and that was, and that shall be," so far as they know anything "that is, or was, or shall be," so far has Nature herself, with her own hand, already lifted her veil.

This general truth may be enforced and made clearer by recurring for a moment to the epistemological point of view. The distinction between the phenomenal and the actual is, of course, a distinction which emerges in the development of knowledge. It is a distinction which applies only to objects of knowledge, — whether to the self or to things that *really are* not-the-self. But let it be considered from the knower's

point of view, and what is the meaning of the distinction clearly found to be? Phenomenon and appearance, and all similar terms, mean that every object of knowledge may, nay must, be considered as somebody's object known. "Phenomenon" is any particular object of knowledge, regarded as "showing" itself in the stream of consciousness *to* the being, the total manifestation of whose own existence is this stream. "Appearance" is any particular object which "presents" itself to the Self, before whom all objects present themselves for cognition, for recognition, and for reflective treatment by the higher forms of thought. Without the assumed presence of this *real* being, this conscious self, neither showing nor appearing can be conceived of as taking place. Nor can it properly be said that such an exposition of the significance of knowledge is merely figurative; and that to be satisfied with it is to allow one's self to be deluded by attractive figures of speech. The rather are we dealing here with that actual and indubitable experience which itself requires and admits of no figurative explanation or elucidation; on the contrary, it is this experience itself which is the source and the type of all similar figures of speech. Phenomenon and reality are words which refer to this experience. Every manner of shining and of seeming takes itself back, for all the meaning which it can claim for human thought, to the same fundamental facts of cognition. Phenomenon and reality are words totally without significance, unless they are understood as descriptive of the terms on which all human knowledge takes place. Nothing is known, or can be conceived of as becoming known, except as it appears in consciousness to some real knower. Or, — to change somewhat the customary meaning of the word, — *There is no phenomenon which is not made to be "phenomenon" by relation to the cognitive processes of a "noumenal" Self.* Every phenomenon is *to* some mind; every appearance is *unto* some real, cognitive being.

From the more metaphysical point of view (although this also is an assumption without which knowledge itself is impossible) we are equally compelled to say that every appearance is *of* some real being — Self or Thing. Otherwise our very words are devoid of meaning when considered from this point of view. For every particular phenomenon some kind of correlated activity, which may be spoken about as the manifestation *of* some particular agent or active being, must be assumed. And just as no appearance terminates in mid-air, or in a void, so no appearance arises from mid-air or from a void. Phenomena do not issue from the womb of non-reality. Every shining is *of* some sun, as surely as it is *into* some eye; if the total experience is the perception of light. In other words, manifestations are *of* realities, *to* cognizing selves.

Neither can the significance of that experience of mankind in which originates the distinction of appearance and reality be diminished by reminding ourselves that both physical and psychical phenomena belong to the consciousness of the lower animals. Nor do we succeed better when we consider ourselves and one another as "but a moving-row of shadow-shapes." The admission of a merely animal consciousness, or of a human consciousness that is merely sensuous and dream-like, does not make the distinction itself, whenever it emerges in consciousness, any less important. This is, however, not the question now under discussion. For our present inquiry does not concern the genesis of the distinction at any precise point of time, or in any grade of mental development. Our present inquiry concerns the nature and validity of the contrast involved in the distinction, particularly as applied to external things. Our present contention in answer to the inquiry is this: the distinction between the phenomenal and the actual is without meaning unless both terms of the distinction be considered as involved in every cognitive experience. Every such experience is a manifes-

tation of reality to a reality. The reality to which the manifestation is made is always, necessarily, the knower, the cognizing self. And such manifestation the knower always receives — these are the very terms on which knowledge is possible — as coming to him from some reality.

This trans-subjective reference of all knowledge, this implicate of actual being which is an inseparable moment of the cognitive state, we have elsewhere discussed, in a critical manner and at great length. The truth is referred to in this connection in order to emphasize the correlate truth: Appearance and Reality are never, even in thought, so to be separated or contrasted as that each does not involve the other. No appearance arises in human cognitive consciousness without reality implicate; no reality is cognized otherwise than in terms of its appearance. For actuality does not withdraw when the phenomenon occurs; nor can the phenomenon occur otherwise than as the announcer of the presence of reality. And to throw the two into such a contrast as renders their spheres mutually exclusive is not only to render them both unmeaning; it is also to misinterpret the most fundamental data of human cognitive experience.

An analysis of any individual thing known, whether in terms of the plain man's consciousness or of the more elaborate cognitions of science, enforces the conclusion so important for systematic metaphysics: phenomenon and actuality must be regarded as inseparable correlates rather than as mutually exclusive spheres. It is a trite saying and one about which psychology and metaphysics have wrangled much: "Things" are always known as real beings that possess qualities and achieve results. To constitute a "Thing" the phenomena must be supplied with a "that-which" — a kind of point of issue and of termination for those events which are considered as answering our questioning after "what," and "why," and "what-for." Every one knows what it is to be deceived and led into error in his

search for an answer to this questioning. Every one can be made to stare at finding his cherished "core of reality" vanishing into nothingness, if he responds to the invitation to strip "the Thing" of all those qualifications which give to him its "what," and its "why," and its "what-for." But every one, no matter how often thus deceived and astonished, continues virtually to make, and to enforce upon himself, this same distinction as belonging of necessity to the real existence of every object. If we may be pardoned so uncouth yet convenient a word, the "Thing-hood" of everything involves, in a kind of necessary unity, both phenomena and actuality. This "Thing-hood" is the almost infinitely complex appearance of some real being. It can never be either mere appearance or pure unmanifested reality.

None of the wonderful discoveries of modern science, with its improved instrumentation which reveals to sense the exceedingly small and the very remote, and which makes apparent to imagination hitherto undreamed-of relations and activities that lie beyond the reach of sense, alter this truth in any respect. These new forms of appearance are *of* the same actuality. The answers to the inquiry, *What* is the nature of this actuality? are indeed made indefinitely more numerous by these improved methods of observation. Each modern science has its rapidly extending list of answers to the demand for qualifications that will actually apply to every meanest thing. And the wonder of it all is that we never find ourselves able to explicate the whole of the qualities of any form of real being. We are constantly discovering that each thing is really *some* "what" more than we had hitherto known it to be. The answers to the inquiry, *Why* does this particular thing behave thus and so? by no means keep pace with the discoveries that define its circle of qualities in answer to the question, What? Yet modern science is constantly making its answers to the search after explanatory causes more numerous and more precise. Nor

is it wholly barren of fruit that satisfies the appetite to know the teleology of particular things; although science does not consider its duty to lie chiefly in the effort to answer the question, *What for?*

In all the growth of modern science, however, reflective thinking as to the hidden qualities and hitherto unnoticed causes of external things is based upon observation. This is of the very essence of science. But observation necessarily keeps the phenomena as experienced, and the actuality as scientifically defined, in constant living intercourse. Every correction of an error or of a partial statement is a fresh appeal to the indissoluble character of this connection. For science such correction never means the more extended separation of the apparent and the real; nor does it mean the confession that what is now known to have been only apparent was not also an appearance of the real. Science that is true to its name and to its duty can never commit the almost stupid blunder of a metaphysics which thinks to get at reality by some *tour de force* of "pure" thinking separated from a basis of actual commerce with observed facts. And observed facts are, of course, phenomena.

To expound further the distinction between phenomenon and actuality as applied to things, and to show the significance and value of the distinction in the current conceptions of particular beings, their qualities, their processes of becoming and change, their relations, etc., is an important part of the body of any theory of reality. What is meant that is important for the shaping of a metaphysical system by such distinctions as that between "apparent motion" and "real motion," "apparent change" and "real change," etc., can be considered in its proper place. But no attempt at metaphysical system can be conducted properly without abandoning from the beginning the unmeaning and even absurd contrast of appearance and reality, as though they were mutually exclusive, or contradictory, conceptions. The introduction of

this contrast necessarily results in a perpetual vacillation between two mutually exclusive and contradictory metaphysical positions. By emphasizing the phenomenal, it leads to the conclusion that all actual human knowledge is illusory, hopelessly confined to the realm of *mere* appearances. Such a doctrine of Mâya recommends suicide for the metaphysician, as a *coup de grâce* inflicted at the very beginning of what might, if he would only stay his hand, turn out a really brilliant career. But compelled to emphasize in turn the actual, this doctrine finds satisfaction in positing the conception of a *mere* Being, a Unity undefined and unknowable, a *Ding-an-Sich*, hopelessly remote from all concrete and verifiable experiences. And thus, indeed, the metaphysician saves his own life, — only to find that in the estimate of his fellow-men and of himself, when the ethical and religious needs of life are pressing, he might quite as well have lost it.

Inasmuch, then, as metaphysics, like every other methodical and well-founded search for the extension of knowledge, bases itself on cognitive experience, we accept the distinction between phenomenon and actuality. It is a distinction embodied in the essential nature of every cognition. It is a distinction which characterizes the essence of the "Thinghood" of each particular thing. But it is a distinction, or, if you please, a contrast, in which the two terms involve each other. The true and all-inclusive reality must embrace them both. And what is true of each particular object of knowledge is true also of the world of objects. He who follows one set of conclusions so far as to pronounce, with the ancient philosophy of the Orient, all things to be illusory, to be Mâya indeed, must also adopt the statement with which this philosophy itself supplemented so startling a conclusion. And then he shall say with it, as he stands in the presence of every particular and concrete real thing: "That, too, art thou."

The other preliminary conclusion with which we are to meet on the threshold the distinction between phenomenon and

actuality is no less important. It can, however, only receive a simple statement at this point in our discussion. Its expansion, exposition, and defence is a sort of central thesis in the entire theory of reality. In a preliminary way the conclusion may be stated as follows: *The distinction of phenomenon and actuality as applied to things in particular, and to the entire world of external objects, has its meaning and its validity upon the assumption that it is made after the analogy of the same distinction as applied to ourselves.* Things are real subjects of those changing states, which become phenomena to us, in somewhat the same way as that in which each Self is known to be the subject of its own states. This phrase, "in somewhat the same way," is designedly made vague; its further definition is an important part of the problems of systematic metaphysics. The clear and satisfactory definition of this, and every similar phrase, may be quite impossible. The discussion of its meaning may often seem to end in the shadows of conceptions that are inchoate, or even in a sort of dark chaos of stirring emotions. But everywhere we shall find ourselves obliged to return upon the position from which the critical analysis of the distinction between phenomenon and actuality sends us forth. For all things, too, whether as experienced in particular or conceived of as together constituting a system, Reality is known as a being that is, after the analogy of the Self, the subject of changing states. For things in particular, and for the Cosmos in the large, phenomenon and actuality are distinguished and contrasted only as they are conceived of in terms of the Self and of its various "moments" — not divided in thought or in reality; but united in each and every reality because both are given in that cognitive experience which furnishes the problems of metaphysics to thought.

If we were to undertake at this point a thorough criticism of the proposition just made, we should only take time which is needed for the same work in other connections. A few

words of general exposition must suffice. We have seen that the distinction of phenomenon and actuality is itself realized in every act of self-knowledge. In every such act I appear to myself — the phenomenon *of* a really existent self *to* itself. In every act of perception by the senses, however, that appears *to* me — to the same self — which is not a phenomenon *of* me, but of some other really existent thing.

But now suppose that this "thing-like" appearance is detected in actually being not what it seems to be; and I then call it a *mere* appearance, or — more technically — an illusion or an hallucination. It is now a thing which has somehow cheated me into recognizing it as the phenomenon of the wrong subject. What must I do in order to maintain that sanity of intellect which knowledge presupposes? Nothing more than change the point of attachment from which the phenomenon proceeds, the being of which my conscious state is made a phenomenon. This I may do in either one of several ways. I may attribute the phenomenon to another and different kind of subject from that whose appearance to me I originally thought it was. It *seemed* a ghost; but it *really is* the moonlight reflected from the folds of the curtain. It seemed an ordinary man, but it really is a materialization of a friend's departed spirit. It seemed a solid form, or a ship upon the horizon; but it really is an upright streak of floating mist, or a mirage. Or again, I may take the unconsciously or the scientifically psycho-physical point of view. Then the subject of the phenomenon is my bodily self; and the phenomenon is an appearance to me of some organ or condition of this bodily self. It is a defect in my vision, a figment of my brain, a disorder of my internal organism. But in this case, since the phenomenon is not familiar to me as the phase or condition of a thing, I must put in between it and its real subject some intermediate link. And this link, too, must be a phenomenon which would appear *to* me, or *to* some other mind, as *of* the brain, or the liver, or spinal cord, if only we

could get into the proper relations to the actual thing-like subject. Or, finally, I may take the wholly subjective point of view again; I may turn, on grounds of practice or of theory, to the solipsistic position. And then the phenomenon which is an appearance *to* me is also an appearance *of* me; it is simply my conscious state, which I have somehow mistaken for the state of some being other than myself.

But to whatever point of attachment in reality the phenomenon is linked by our perception or by our thought, the nature of the distinction implied remains essentially the same. The ways of making the distinction change; the nature of the distinction itself is unchanged. From the epistemological point of view, phenomenon and actuality mean, when applied to things, a distinction between a being that is somehow the permanent real subject of its changing states and these changing states themselves. The contrast and the unifying which are both involved in the distinction belong to the essential nature of all cognitive activity. And if knowledge is valid for things, and this distinction really applies to things, then the words "phenomenon" and "actuality" as applied to the external world signify the same fundamental truth. The contrast and the unifying are both valid in the distinction as applied to this external world. This world is known, and is known in a trustworthy way, by a projection of the same distinction made after the analogy of our cognitive experience with the self.

How fruitful this thought, with the assumptions it involves, becomes for our understanding of the essential nature of things, and indeed for the perfection of any attempt at a systematic metaphysics, its future development must be left to show. But having passed the threshold we may now bring ourselves face to face with that conception in which all the problems of metaphysics lie clearly or obscurely involved. This conception is one which thoughtful men frame carefully and hold before their imagination with open or suppressed emotion. It is expressed by the one word *reality*.

CHAPTER III

ANALYSIS OF THE CONCEPTION OF REALITY

WHAT is it that gives to the word "Reality" the feeling-full significance with which men so frequently employ it? That this term, and all other terms which convey meanings similar to it, have an uncommon power over the mind, he cannot doubt who has observed the language and conduct of men. The explanation which answers, partially at least, the question just raised would have to notice the following three classes of particulars. The search after what we feel ourselves entitled to call actual, and our debate about the actuality of any particular being, event, or relation, is often a matter chiefly of scientific and speculative interest. It is a search and a debate which are forced upon the mind in all its keen pursuit of knowledge for its own sake. For the terms employed by the knower are meaningless unless they are understood as having an ontological reference, an implicate of, or a hint toward the transcendent. The truth is that the mind never affirms knowledge — whether the object of the cognitive activity be a fact, a relation, a law, or what-not — until it feels that it has somehow obtained a grasp upon the transcendent. It is not conceivable, therefore, that any being which desires *knowledge*, as men are obliged to understand this term, should be otherwise than interested, in a somewhat emotional way, in all that is conveyed to thought by the word reality.

In this connection it may be noted that men feel a sort of insult offered, and wrong done, to the cognitive faculties when they are accused, in particular instances, of inability to lay a

grasp upon reality. The modern dilettante agnostic, indeed, within his scholastic retreat or in the confidences of his club, debates with indifference the question whether all human knowledge be not illusory. He is perhaps moved to indignation by his opponent's claim to know anything about ultimate ontological verities — especially of the ethical and religious order. His antagonism is perfervid ; but fervent faith or pretence of knowledge seems despicable to him. Yet when it comes to the application of his fundamental principle to any concrete instance, the professed agnostic is as eager as another man to know what the being "really" is, what the event which "actually" took place, or in what terms of a general formula we may express "truthfully" the habitual transactions of things. And to accuse him of not caring for the truth would be as unjust as to bring the same accusation against the most honorable of the dogmatists. But *truth* is a word which has no meaning without the implicate of reality. And we need only to consider the very nature of cognitive judgment in order to see that it is always pronounced with that trans-subjective reference which is the fundamental tie between the subject's passing state and the object's relatively permanent existence.

The emotional warmth, however, with which men somewhat habitually clothe their use of the word reality is not by any means a purely scientific affair. Its potency consists even more obviously in its relation to our practical and ethical interests. We want to know the reality of things because we have got to act — to conduct ourselves ill or worthily, safely or harmfully — in view of this reality. What that particular thing is, what that alleged event actually was, on what habitual mode of the behavior of things we may reckon under a certain set of circumstances, it concerns us to know in a practical way. For we must meet the thing, or use the thing ; we must prepare for, or seek to thwart, the expected event. The stream of human consciousness does not flow on as though man's intellectual constitution, or affective disposition, or conative

effort, were its sole determining source. The rather is the nature and direction of that stream dependent upon actual relations with a system of trans-subjective realities. It is how it affects me, — to change my "æsthesis," the pleasure-pain series, and the realization of my conscious plans, — that gives its significance to the actuality of any particular thing. In a poetical way and imaginative mood, I may speak of mind as determining my interests and even as making a heaven or a hell for me; but, after all, I am constantly brought back to new and more rational estimates of the importance of being in certain relations to the environment of actual things. The actuality that is in the environment, the reality of what cannot be resolved into a mere mood or state of the self, is the important practical consideration for the multitude of men.

Account must also be taken of the meaning of reality, if one is to lead the life of a moral and social being. Such a life is vaporous unless it be a part of a system of mutually related and interdependent realities. We cannot even conceive of an ethical being which does not belong to such a system of realities. However far solipsism and agnosticism may go in satisfying our intellectual demands for an account of the genesis and development of other experience, they both utterly break down under the weight of ethical demands. In another connection [1] we have shown in detail how the categorical imperative of Kant is — in its structure and not to speak of its applicability to the actual conditions of humanity — self-contradictory and absurd, without the admission of a system of ontological implicates such as his own critique of cognition has distinctly discredited. The Critique of Practical Reason transcends or violates every conclusion of the Critique of Pure Reason. Solipsism and agnosticism cannot furnish any intelligible ground for ethics. Men always understand *con-*

[1] See Introduction to Philosophy, p. 186 f.; and Philosophy of Knowledge, chap. xi. ("Experience and the Transcendent"), and chap. xii. ("The Implicates of Knowledge").

duct as a transaction between self-existent but related realities, mediated by other thing-like realities. Strip off this outfit of trans-subjective assumptions, references, and finished cognitions, and there is nothing left to answer to the word "conduct." Little wonder, then, that men regard the conceptions embodied in the word Reality as of the highest practical and moral import.

But we must also notice briefly a certain æsthetical potency as belonging, by native right, to this same conception. There is truth in Mr. Balfour's claim that a part of the equipment of a metaphysician is an æsthetical mind. The subjective ground upon which this claim rests, or to which it appeals, it is the task of a theory of knowledge to investigate. The ontological ground for the same claim will become — it is reasonable to hope — somewhat clearer as our theory of reality is developed. The claim certainly suggests that *Reality* itself has, as a necessary part of its very conception, æsthetical "momenta," or factors, or subordinate conceptions. What it is in place now to notice, however, is this: an awakening of human æsthetical consciousness is a natural response to any intelligent conception answering to this word. The mind has a kind of respect, a feeling of awe and of mystery, for that in every meanest thing which *is* real, which is not merely its own subjective state of the apprehension or the conception of the thing. The sources of these emotional stirrings are indeed somewhat difficult to explore. But they lie deep, and they persist throughout all changes in history. Nature, our Mother, stands over against us — in a measure ready to lend herself to our wills, but in still larger measure independent of our wills; in a measure, too, capable of being understood by, and taken into sympathy with ourselves, but in still larger measure baffling our most determined efforts and our profoundest reflections. If we perish, she persists; and from her womb new and strange beings are ceaselessly produced. Was it with something of this feeling that the gentle Spinoza

is said to have watched, with so great interest, the fierce fighting of spiders? Surely it is this feeling which furnishes, in part, the source of wide-spreading nature-worship. And how else shall we fully justify the metaphysician's tendency in all times to make imposing, by capitals, or italics, or sonorous and often unmeaning phrases, the expression of this conception in its most universal form? Why otherwise should men be moved before such mere words as the One Being, the all-inclusive Becoming, the Reality, the Idea, the Universal Substance; or even Matter, Force, and the Unknowable?

In this strange potency of terms, significant of the transcendent Reality, to move the ethical and æsthetical feelings of man do we find the partial justification of Goethe's declaration: —

> "*Wer Gott nicht füllt in allen Lebenskreisen,*
> *Dem werdet Ihr Ihn nicht beweisen mit Beweisen.*"

For in "all the spheres of life" we come face to face with reality; and as we know it concretely and yet so very partially, and mould it practically while being ourselves so completely within its grasp, we *feel* what is a fact of cognition, but also what lies beyond the reach of our cognitive powers. And synthesizing this, man attains a conception that awakens his æsthetical nature as well as guides and limits his practical life.

We must be prepared, then, for what any attempt at an analysis of the term "reality" makes perfectly obvious. And this is, first, a certain surprising wealth of content which rightly belongs to the most meagre conception answering to this word; and, second, a certain something over and beyond all that can be stated as the result of merely reflective analysis. That is to say: *Every real being is known as real, because it is presented in experience under a variety of thought-forms; but there also belongs to the reality of every being given in our*

cognitive experience, somewhat more than is obvious simply to all thought-forms. Thus it comes about that every particular thing, when it becomes an object of knowledge, seems to say to us: "I am here; look and you will know in part what I am; but only in part, for there is that in my being which precedes and gives unavoidable conditions to your fleeting and fragmentary act of knowledge; and when this act of knowledge is exhausted and has passed away, I shall still be essentially unchanged." By repeated experiences of this same sort the mind of man comes to hold a certain vague yet comprehensive conception of reality, in general; of what it means to be real, and of what is the totality of real beings as known to man. And this we perhaps try to gather together into some single pulse of thought, and to express in few words to ourselves or to others. At this point the snare of both the popular and the scientific and systematic metaphysics is the attempt at an impossible simplicity. For neither in the uncritical assumption that actuality is exhausted by the "crude lumpishness" of things, nor in the most elaborate but merely logical arrangement of philosophical abstractions, can the mind describe all that its experience with every particular reality implies. And when we try to gather into one sentence all our experience with all realities we can — speaking reverently — scarcely be more definite, and at the same time comprehensive, than to say that they bring to us the message of the Infinite and the Eternal: "I am that I am."

This somewhat too mystical way of expressing a fundamental truth of metaphysics is certainly in need of further reflection and of restatement. We must, then, drop the more vague general word, "Reality," and inquire: What do men mean by calling any thing, event, or relation *real?* On this point the sentence with which Lotze opens his system of metaphysics is not at all illumining: "Real (*wirklich*)," says he, "is a term we apply to things that exist in contrast with those

that do not exist; to events that happen, in distinction from those that do not happen; and also to relations which obtain, in comparison with those that do not obtain." For this sentence does not even tell us how we may rightly use our words; much less does it aim to instruct us as to what is the conception we should attach to these words. Nor does the somewhat celebrated *dictum* which the same writer afterwards proposes and defends — "To be (i. e. really) is to stand related" — advance us more than a single step upon our way. For if we agree with Lotze that "pure being is an abstraction," we must go on to show that "pure" relation is also an abstraction. And if we maintain that relation is a category, a form of cognition under which all real beings fall, we must give an almost untold wealth of meaning to the conception of "standing" under this category, in order to make the compound term ("standing in relation") express our entire valid experience in the cognition of any particular — no matter how insignificant — Thing.

To establish on a firm basis of incontestable experience the statement just made, we have only to consider all that is involved in our knowledge by the senses of any particular thing or particular event. The question which is to be answered by bringing it to the test of cognitive experience is this: What is it really to be? But there is no other way even to begin the answer to this question than to make a study of actually existing things as they are known to men. Neither pure mathematics, nor formal logic, nor a metaphysical dialectics that is aloof from concrete knowledge, can suggest the answer, or even furnish any method of approach, to a problem like this. *Cognitive experience with concrete things contains at its roots, if anywhere it is to be found, the beginnings to a true answer of the metaphysical problem.* When we examine any such experience we find in it, as experience, a living contact with reality, which relieves us, if we will only accept and deal candidly and yet thoroughly with this proffer of relief, from

the results of two equally false assumptions: either that our logical formulas can wholly compass reality, or that reality is simply the unverifiable construct of our own thoughts. For, when looked at from the epistemological point of view, this knowledge given to us through our senses, but by no means wholly in terms of sensation, implicates a being not-ourselves that is limiting and opposing our wills and yet is ever entering into actual relations with us in manifold ways. With this reality every cognitive experience with the senses puts us into actual and vital relations.

When we turn from asking ourselves, What am *I* now doing and suffering as I know this thing? to asking ourselves, What is this thing which, by my doing and suffering, I am coming to know? the answer to the latter question may be almost indefinitely prolonged and varied. But each item posited in answer to this question is required for its fullest answer; and when all the items have been handed in and estimated as fully as possible, the answer is, in every case, by no means complete. For every single thing,—no matter what, whether crystal or flower, stone or star, amœba or human body,—*really is* essentially all that every other thing is, all indeed that the known universe of things can claim to be. Its real being is no bare simplicity of existence; its real being has all the variety of the universe concentrated in it. Its being is an epitome of all things; and it may be known as such to us.

Every real Thing is, then, an actualization, in an individual way, of all the categories, or necessary and universal forms of all existence. It is a concrete and harmonious unifying of these categories.

Now it is not the part of the metaphysician, who is a candid and thorough seeker for a valid answer to the question, "What is it to be real as this Thing is?" to play hocus-pocus with the testimony of his own experience. It is not his part to manufacture contradictions and collisions between his own thoughts and then to objectify these unhappy conclusions in the

reality given to his experience. We repeat: The thing holds in its being all the categories, in perfect harmony, and in living consistency with its own continued existence. Its being *is* the harmonizing and unifying of all those conceptions with which the critique of metaphysics has to deal. In the actual thing, as I and other men see, handle, and use it, and learn about where it comes from and what it will do, attributes are not divorced from substance (whatever we may mean by this latter word). In the actual thing there is no contradiction set up between unity and variety, between motion and rest, between being and becoming. These contrasts and contradictions arise amongst the crude abstractions of the thinker who has somehow gone astray in his thinking; they are not actually existent between the parts of the one reality as given to the cognitive experience of men; or between this particular reality and other equally real things. Contrasts and contradictions enough, of a certain sort, there are in that system (?) of realities we call the World. But they are such as cannot wholly be harmonized in any one concrete existence. Whereas *all the essential factors and forms of being which belong to the conception of a "thing" are harmoniously present, to our cognitive experience, in every concrete thing.*

Our thought needs illustration from some example. And as an example that is fit indeed to illustrate the truth of a whole system of metaphysics, anything will do. Let us go into the garden and stand before a rose-bush in full bloom. What is the answer which this particular thing gives to the ontological problem: What is it to be real? To get any answer at all, we must ask this particular thing, definitively and persistently: What really art thou? In the first "pulse of attention" with which we regard the rose-bush its reality becomes only vaguely defined in the consciousness of the observer. It is first apprehended as something that is not-ourselves, — there, out of us and present before us, but needing further definition as to size, shape, significance, and use, of itself as a whole and of

its various parts. But persistent application of all our cognitive faculties — and these include all the forms of the living existence of the knower — progressively defines what this being in particular is. The answer we get as we know more about the rose-bush is a succession of cognitive experiences in us which is interpreted as a simultaneous possession by the thing, of its various qualities. The experiences are a succession of states in us; but the thing possesses all the qualities at the same time. We see that it is crimson, that it has so many petals, sepals, etc.; that it answers to our memory-picture of such a species with such a name. We know it as having these qualities and being of such a name. But now we invoke our other senses to make the flower-bush tell us what it really is; and with the result that we are affected by its odor, feel its soft, velvety leaves, suffer the prick of its thorns, and are resisted in our effort to break through its stalks. This, then, is what it actually is to us, as answering our metaphysical inquiry through the media of our unaided senses. Let this thing thereupon be taken to the physicist, the chemist, the botanist, the biologist, the historian, or to the painter, the poet, or other student of the æsthetical. And they shall all be made to contribute volumes in answer to our questionings after information as to what really is this so humble and so insignificant a thing.

When the various answers to the ontological problem from the different preliminary points of view — practical, scientific, and æsthetical — have been received, let the student of systematic metaphysics raise his peculiar form of inquiry. What is this particular thing known to be, as possessing those characteristics that connect it with the system of things? Its very reality consists in its having all the essential characteristics common to all things; and, as well, in having them all in some sort of a harmonious and vital unity. The rose-bush occupied, and yet could be moved about in, space; it endured, and yet changed in, time; it supported

and evinced many qualities; it suffered and did many things to us and to other beings, in a great variety of relations; it could be weighed and measured and counted, as a whole or in its separable parts; it had a certain characteristic form and fell under certain well-known or conjectural laws. In brief but figurative language: *It showed itself possessed of all the categories.* Quality, Relation, Change, Time, Space and Motion, Force and Causation, Quantity and Measure, Unity and Number, Form, Law, and Final Purpose — they were all present and harmoniously operative in this one single thing. It was this unity effected in all the categories which made the rose-bush a valid "specimen" of what an actual Thing is.

Considered as content for conception, every experience of cognitive perception gives this same full meaning in answer to the inquiry: What is it to be real? No one conception, or class of conceptions, to the exclusion of others, is sufficient to furnish the satisfactory answer. The rather is every particular thing known to be real according to the fulness of the answer with which it actually satisfies all these forms of conception. And further, the very nature of thinking is such that, for purposes of thought, we may indeed render the different parts of our experience abstract; but if we render any part abstract, by a separation of it in thought from the others, we fail to take into account by our thinking all that our cognitive experience actually implies. Our theory of reality will thus become too poor to embrace any meanest thing as it is known to the weakest of really human intellects. *In this respect the nature of Reality is at variance with the nature of thought; the nature of Reality is rather in accord with the total nature of our experience with our self and with things.* The bearings of this conclusion must now be left for future reconsideration and further development.

Attention has already been called to the experience of man as a knower, that every particular being actually answers the metaphysical question, What is it to be real? in a way that

is not wholly exhausted by even the most complete analysis of human thoughts. The evidences for this are found in the cognitive experience itself, in all the language which men employ to designate the garnered results of this experience, and in the outspoken theories or covert admissions of metaphysicians of every school. This "something more" is of two kinds, which may be regarded from two quite different points of view. In the first place, in our most complete knowledge of every thing there is involved the consciousness of a present limitation of cognition as to what the particular thing is, with an added consciousness of the possibility of this thing being known to myself or to others in manifold other ways — either conceivable or inconceivable by them and by me. I can now indeed tell, on a basis of my own experience, only a short but true story as to what I know this "thing" to be. But the story "as-to-what" the thing really is admits of an indefinite expansion. There is always, then, to imagination and to thought, the suggestion of a more beyond, as possibly belonging to the nature of the thing. This it is, in part, which makes fetish worship so spontaneous in the ignorant; and it is this which spurs to ceaseless explorations the scientific mind.

There is in every real Thing, moreover, another kind of "something more" than that which can be stated in any terms of thought. And this is the answer in our experience which the object gives to the inquiry whether it is a reality at all or not. Now this answer can never be completed by a mere multiplication of qualities, activities, and relations, that are without any "common point of attachment." This answer is only to be completed by the positing, with conviction, of some common point of attachment for all the particular qualities, activities, and relations. We add to our knowledge *as-to-what* any particular thing is, only on the basis of a knowledge, somehow already assumed or gained, *that* just this particular thing really is. *We qualify only that*

which is experienced as actual. But the mental affirmation of the actuality of any object of our cognitive experience has somewhat different roots in this experience from those out of which grow the different qualifications of the same object. Knowledge of the qualities, changes, and relations of things is the result of activities belonging to discriminating consciousness, in which continual and indefinite growth is possible. But the real existence of any thing cannot be made clear by a mere description of consciousness "content-wise;" nor can it be represented in terms of mental images merely, or in the fuller terms of conception and reasoning. These terms all need some "point of attachment," as it were, some factor in the cognitive process which shall serve, on account of its relative stability, to give to them the unity and solidarity which belong to man's experience with what he calls real. For the Self, such a factor in every act of self-knowledge is not difficult to find. It is found in that immediately felt self-activity which is the central element in each particular act of self-knowledge. I know myself as actually existing, because in all knowledge of myself this felt self-activity is present as a sort of point of attachment for the particular forms of the experience which I know myself to have. Generalizing, and expressing the results of reflection in an abstract way: — I know *that* I am; because, as the basis of all discriminations as to *what* I am, and as the core of all such self-knowledge, I immediately know myself as *will.*

In the growing knowledge of self, the knowledge of things is interwoven; and both in character and in amount, the two kinds of knowledge are interdependent. For all my knowledge is of my Self as a will that is impeded, checked, limited by that which I cannot identify with this self. This "something-other-than-myself," which is confused and mingled with myself in all the earliest stages of mental development and in every subsequent pulse of attention that does not secure a completed act of clear knowledge, becomes divided up into

many points of attachment for the various qualifications of so-called things. But what meaning shall be given to such of these points of attachment as cannot, by the very terms of the growth in knowledge, be identified with the active and suffering Self? What meaning can be given, other than to regard them after the analogy of what is so immediately and indubitably recognized in one's own existence? These are the points of attachment for the qualifications which are "not-self." They are existences in reality; but they are existences which I have come to know as not-me. They are things; and they could not be conceived of as real unless I attributed to them a core of self-activity similar to that which I feel in myself and call my will. *That things actually are is, then, a factor in my knowledge of them which springs from the root of an experience with myself as a will, at once active and inhibited, as an agent and yet opposed by another. That* in any thing which is the point of the attachment for all those qualities which the growth of knowledge ascribes to this particular thing, is identical in its being with what, in ourselves, we call "will."

The further amplification and defence of the conclusion just reached belongs to subsequent chapters. It is enough at present to note that all cognitive experience with things carries in itself the provision for such central points of attachment; and that this provision is not made primarily by any growth in the clearness and multitude of our thoughts; it is rather given in the fact that all knowing involves the immediate experience of Self and of Things, as our Will inhibited and limited by other will. The way that popular and scientific language recognizes this characteristic of all human cognitive experience with things is full of suggestions for the metaphysician. In spite of objections from psychologists and of sarcasms from idealistic metaphysicians, the popular mind refuses to be satisfied with the doctrine that all of any reality is expressed by summing-up its

qualities; nor is this refusal mitigated by the offer of psychology or of metaphysics to add: "so far as we know" things, or considered as things "for us," etc.

By various figures of speech the popular effort is made to express the disbelief that the mind is itself a *mere* "stream of consciousness;" or that the external object which the mind knows is a *mere* bundle of attributes — a bundle somehow got together by circumstances, or come together into a temporal unity without unifying activity of its own. On the contrary, every Thing or Mind must be regarded as "that which" has the qualities; as "that to which" the properties belong. The word "qualities" means, in the popular estimate, the various answers which the reality gives to our inquiry as to the sort, or lot (*qualis*), among realities, to which this particular thing belongs. Properties are the "very own" of the things; but the things are the *owners* of the properties. In vain does the expert make common folk stare with his unanswerable inquiry: And what would be left of any thing after all its qualities have been removed? or, What can you make clear to thought regarding the being of the thing, that is not statable in terms of its properties or its relations? There can, indeed, be no doubt about the answers to these inquiries: No reality, but only an abstraction, is left after the qualities are thought away; and, of course, properties and relations all imply the results of thought upon experience with realities. Yet men continue, and will continue, to believe that there is somewhat more in every thing than can be defined to thought by an enumeration of its properties and relations; and this "somewhat more" is, even if the conceptions of men regarding properties and relations be indefinitely extended, necessary to the *reality* of the thing. Such a necessity is laid in the very foundations of all human knowledge. It is the self-felt life of a living Will.

It will subsequently be shown how inconsistently the physical sciences are accustomed to deal in referring to this

"something" which is more than a mere enumeration of the qualities and relations of things. But these sciences hold to their belief in this "something more" as a central article of their common creed. They all unite in generalizing upon the basis of their experiences with individual things, and thus frame an elaborate conception of "matter" in general. They feel the necessity for a greater wealth of real existence than is covered by even this elaborate conception; and so they have recently posited another kind of being, or active agent, to which the name of "ether" is customarily given. And the achievements of nineteenth century physics are largely summed up in the conception of ether. Now that modern physics is provided with two great kinds of entities, — matter *and* ether, — both of which may stand as subjects for the manifold new qualities and relations of things which it is discovering, this science feels itself much better equipped for the handling of phenomena. It may complacently go on in its work of defining matter, and defining ether, by the very proper, specific method of telling us what these beings can become and can do.

But the physical sciences keenly feel and frankly confess the limitations of their knowledge as to the nature both of matter and of ether. And they are wont to say, when pressed, that we do not know, and probably never shall know, the "essence" of either. They are ready to turn over to metaphysicians further inquiry as to the real beings which correspond to these conceptions. Still the physical sciences, in telling us what particular things are and can do, must always have nouns for their adjectives and their verbs. They must also employ substantive terms in the statement of their higher and their supreme generalizations. This necessity is upon them, even when the modesty of the scientific mind induces some such expression as an "unknown and unknowable *that-which*," to substitute for the more definite conceptions of matter and of ether. And not

infrequently the Samsons among the true Israel of science give such a strong agnostic hug to the two pillars (matter and ether) upon which the temple above them reposes, as to be in danger of bringing it down upon their own heads. But if these pillars were pulled down, men could never build again the temple of the physical sciences as a system of cognitions touching reality, without putting other substantive existences, other entities, in their place. Now from the epistemological point of view all this manner of speech is but testimony to that root of cognition which lies too deep down in experience to be ever exposed merely by reflective thinking. And from the metaphysical point of view, the same manner of speaking shows how the reality of any thing involves *that it is*, as somewhat too deep in its significance to be wholly disclosed by telling *what it is* — to me and to other minds.

All schools of philosophy, too, virtually recognize that fulness of meaning to men's cognitive experience with the reality of things, upon which we are insisting. The philosophical uses of words like "substance," "substantiality," etc., have perhaps happily gone by. The debate between realism and phenomenalism, in any form assumed by either party to the long contention, will scarcely again repeat the terminology of Locke, or of Berkeley, or of the Wolfian school as it preceded the critical thinking of Kant. Metaphysics to-day has little more patience with the assumed *Ding-an-sichheit* of the great critic of cognition himself. But the distinctions out of which these terms arose, so far as they lie in that nature which we are obliged to give to every object, because the distinctions set the very terms on which we know it at all, remain essentially unchanged. Without assuming some being which is the subject of the phenomena, no philosophy can state either its problem or its conclusions. With Mr. Spencer the distinctions find expression in such terms as the "Unknown Force," which is the universal subject, and the varied known

or as yet unknown forms of its "manifestation." Teichmüller — to take another example — would handle the problem of reality by starting out from the distinction between *Beziehungs-punkte* and *Beziehungs-formen*. On beginning the metaphysician's task one may signalize the same truth by positing a perfectly indefinite being of all things, which may as well be called an X. The nature of this X is thus made the main ontological problem. But the presence, in every particular thing known to us and in the whole world of Reality, as a condition of its being known, of a "somewhat" which shall serve as a point of attachment for the qualities and relations, must be assumed as an obvious feature of cognitive experience. And this truth — as we have said — is proved by an analysis of this experience, by the meaning of all popular and scientific language about things, and by the admissions, if not the avowed doctrines, of every system of philosophy.

It is out of this root of cognitive experience, which is a felt activity belonging to the self, but is felt as inhibited and limited by that which cannot be identified with the self, that the firm and abiding trunk of the tree of Reality has its growth. Hence comes — to borrow the language of Riehl[1] — "the compulsion to apprehend every sense-experience as the sense-experience of Something, as the property of some subject (X)." Otherwise the mind would never, by any amount of development of reasoning faculty, reach beyond an internal and subjective logical consistency. Universally valid forms of cognition can never alone serve to validate cognition. Experience of a will in commerce with other will is necessary for this. But every act of cognitive experience, since it is something more than pure thinking or mere imagining, furnishes the "that" of some reality to which our thinking and our imagining may attach all that they can discover as to "what" belongs to the same reality. And for every system

[1] Der Philosophische Kriticismus, II. i. p. 42.

of answers to the question, What is it really to be? there must be found an answer to the doubt whether we are entitled to affirm: That something really is.

It is no wonder, then, that every system of metaphysics may also be entitled a Theory of Reality. The expounding of the inexhaustible wealth of meaning which men put into that word, "reality," can never be all discovered and reduced to coin current in the realm of thought, by any amount of miner's skill and miner's toil. On the side of conception, where the ontological problem can be attacked with the detailed analysis of reflective thinking, there is always more beyond, which others may discover. All the growth in knowledge which the individual can make is his best answer to the question: What is Reality? And the answer is never complete for him. But all the growth of knowledge which the race of man makes is the answer of the race to the same question. And the answer of the race will never be complete. There is always more beyond for observation and for thought to compass. Yet in every individual Thing also there is another kind of "*surplusage*" — so to speak. This is that which in ourselves, we experience as the fact of being in existence, and which we conceive of as a potency of manifesting itself in a variety of ways. And we never know any external thing without projecting into that thing this potency, after the analogy of our own selves. It is only on such terms that we maintain our commerce, as real minds, with a system of really existing things.

There are many apparent contradictions which must be met in the attempt to elaborate the conception of reality in its details; and there are certain inherent difficulties which it will never be found possible to overcome. But for this very reason it is desirable not to multiply difficulties unnecessarily; and to get as many as possible of the more superficial contradictions out of the way. To this end the following remarks will serve in a measure.

Reality cannot be considered as a *mere* Process. That change in qualities and in relations is not inconsistent with, but is rather necessary to the reality of things, we shall see subsequently. How the actuality of such change is consistent with any kind of permanency, and what kind of permanency such actual change makes it necessary to recognize, — these are among the special problems of metaphysics. But however far the principle of Becoming may be extended, we can never identify this principle with the entire conception of Reality. To say that nothing but the process is in reality, — this is to say that nothing is in reality. This truth is the more important to bear in mind when, as at the present time, the philosophy of things is so liable to be reduced to a merely descriptive history of evolution. This view regards the real being of the world as a sort of mere show — a stage-performance without an audience. Countless ages ago the show was going on; and this same show has been going on ever since. Before mind was, the process in things began, and went forward to result in the appearance of human minds. But a show that is not a show *of* some reality, and a show *to* some real and conscious Self, cannot be actual. No view can well be more absurd, as an attempt at thinking the reality of things in terms of cognition, than this off-hand identification of a row of mental images of possible things with the entire actuality of things themselves. Nor can we, in the case of any individual thing, resolve its whole real being into a mere process — mid-air, as it were — with which our series of mental images is assumed to be identical.

Nor can Reality be considered as *mere* Law. What is meant by things obeying laws, and what is the reality that any law may have, are problems for metaphysical discussion to settle, if it can. But whatever conception be attached to the word "law," as ruling over things, or as immanent in things, or as nothing but an abstraction of human thought derived from the observed modes of the behavior of things, this conception

is quite too meagre to give the full meaning of the term reality. Moreover, when we come to observe how the particular application of the conception to groups and classes of real things itself changes with every changing point of view, we shall understand better the vanity of trying to exhaust the content of reality by stating it in terms of law. The conception of "Law" in general, even when enforced with a capital letter, is one of the most inert and incapable of all abstract notions.

Neither can Reality be identified with the entire Content of human consciousness. For on the side of consciousness itself, there are many of its products for the real correlates of which we cannot possibly vouch; and not a few which, by their very nature as mental constructs, violate all that we know about the fixed forms and most permanent laws of trans-subjective reality. Nor do we need to go in our scepticism upon this point as far as did Kant. The entire doctrine of truth and error forbids our identifying the content of human consciousness throughout with the real being and actual relations and changes of things. It has been supposed — and this in the reflections of philosophical circles as well as in the puzzles with which the common people have been awed — that the impossibility of making any universally tenable distinctions between the illusions of dreams and the perceptions of waking life, for example, compels us to some sort of identification of the two. That the same activities of mind, under the same laws, account for both illusions and perceptions is a psychological truth which we have always been ready to insist upon. One may go even further, and affirm that no facts of clairvoyance, or of telepathy, or of spiritualistic vision, have as yet been shown to afford avenues of commerce with reality that are essentially unlike those used in all the ordinary work-a-day life. But this does not change essentially the deeper-lying truth. It does not appear even to touch that truth. The very words "illusion," "hallucination," "error" —

and the more contemptuous terms which men so freely bestow upon what they believe to be *mere* thinking or *mere* imagination — embody and enforce this truth. Some sure cognition of reality it is indeed possible to find in the entire "stream of consciousness" we call a mind. For illusions and hallucinations and insane ravings and cases of double consciousness, and every shade and kind of queer conceit or subtle impulse or bizarre superstition, may afford verifiable knowledge as to the real being of the human mind. But all this compels us the more stoutly, and enables us the more intelligently, to oppose the off-hand identification of the entire content of consciousness with the whole realm of reality.

Neither is Reality to be identified with the inscrutable and unknowable Essence of things. The previous view confounds reality with the "crude lumpishness" of things as, in the form of images, they arise in, and ceaselessly flow away from, the "specious present" of consciousness; but this view confounds reality with the most rarefied and even negative abstractions of reflective thought. The former, on account of its apparent clearness and the ease with which it offers itself to the man of what Hegel called "figurate conception," has a charm for shallow minds. The latter is the snare of those who desire to be profound in their reflections. The one eventuates in positivism; the other tends to metaphysical mysticism.

Three principal forms have been taken by the conclusions which those reflective thinkers have reached who make the mistake of identifying Reality with the highest and barest abstractions. The first of these regards the real being of every particular mind or thing as consisting in some "hidden core" of existence. This view results from so expanding the necessity of positing what we have called "a point of attachment" for all qualities and relations as to make that which is thus posited commensurate with the entire extent of reality. Thus the qualities and relations themselves cease to

be *essential* "momenta" in the real being of things or minds. *It* — this "core of being" — would continue to be the essence of the particular reality, if there were no actual qualities or relations to be taken into the account. Sometimes this hidden, inscrutable being of things and of souls slumbers and sleeps; but it always abides at the centre of the soul or of the thing, whatever may become of the superficial manifestations. We do not now[1] object to every such form of substantialism simply on the ground that it is unintelligible, but for a reason yet more serious from the metaphysician's point of view. It aims to put a stout heart into the body of reality, but in fact it takes all the life out of this body. Whatever else we lose from our conception of Reality, we must not part with its *dynamical* elements, with its power to do the work demanded of it by that world of things and of minds which is known to science and is the ground of the practical life. This ghostly substantialism leaves only the bones of being — nay, it leaves but a single bone; it has neither muscle, nor blood, nor brain. The "What" of things belongs as truly to their essence as does the "That" of things. The latter never can be conceived of alone, and it never really is alone.

The second form of identifying Reality with some rarefied and negative conception runs into mysticism in an opposite direction. It identifies Reality with the conception of the unknown aspects and relations of things; or even with that which is unlike all known aspects and relations, — the Unknowable in general, as it were. Now inasmuch as knowledge is always susceptible of growth, in the individual and in the race, the negative conception of what no man knows, has known, or will know, may easily seem larger and more awe-inspiring than the mental image which tries to represent in a single pulse of consciousness all that the race knows, or that any member of the race knows. But it is difficult to conceive

[1] For a detailed criticism of its positions as applied to the case of the human mind, see the author's "Philosophy of Mind."

of a more absurd hypostasis than that which follows from identifying this negative conception with the only actual Being of things. The first form of an abstract substantialism arises, we have seen, from the attempt to make the essence of reality consist wholly in the fact of our undefined believing, feeling, or positing real things and real minds to be. But this second abstraction makes the essence of reality to consist in the negative fact that we do not know all of, or all about, reality in general. This unknown, or unknowable, is then assumed to be the real Ground, or Cause, of all that we do know. Surely this is to make Chaos and Night the ancestors of Jupiter and Minerva; and to convert metaphysics into mythology.

But the third form of disregarding the meaning of our actual experiences with things identifies Reality throughout with "the Idea." Now that no real things exist, or can be conceived of as existing, without taking into themselves potencies which must be admitted as ideal, we shall subsequently show to be a metaphysical truth of the most fundamental importance. We are even ready to put this truth into the following preliminary statement: beings that do not actualize ideas are not to be known, or in any way admitted to imagination or thought, as real. Or, in other words, there is no reality in which there is not, as essential to its being real, the presence or immanence of ideas to be recognized. And, further, the one Reality, or "Unity of Reality," which philosophy seeks, must also be the Ground of human ideals as well as of all the particular realities that become objects of human cognition. But just as we ourselves, even in our small measure, are too large to be identified with our own ideas, or with the total stream of our ideas, or with any one else's ideas about us, so is Reality in the large far more than can be identified with any mere idea.

But to return again to the original and more positive points of view: *Man's conception of Reality must be derived from his*

cognitive experience with concrete realities — subjected to reflective treatment. This reflective treatment, so often as it seems about to end in mere abstractions that arise from the overemphasis of thinking upon some particular aspect of his complex experience, must be called back to the totality of that experience again. This habitual recall will keep metaphysics firmly rooted in the knowledge of real beings and of actual events and relations, while permitting it to be thoughtful.

Speculating in this way of keeping close to the facts of knowledge, we may make three preliminary observations about the valid conception of reality. First: Reality is always primarily a fact; it is, first of all, that which is known as *being in* (both as subject and as object) sense-perception and self-consciousness. In every single cognitive experience of every human being, reality is there; and it is present with all that power to compel conviction which its mere presence brings, and with all that wealth of content with which it offers itself to the work of the discriminating and constructive intellect of man. In discussing the "primary act of knowledge" from the epistemological point of view, this fundamental truth has been repeatedly enforced. We shall return to it again.

Second: Reality is always an actor or agent. Dead and do-less things are not. We may, indeed, make a sort of abstraction of all particular, conceivable forms of acting and doing, and may then try in imagination to convert this bare potentiality into a real existence. But this very potentiality is itself like a slumbering lion — acting in dream-life, and ready, at the first prick of the stimulus, to leap forth in the full strength of its awakening. It is the half-consciousness of this truth which makes much of the physics of the day so obscure and provoking, and yet so tenacious in its conception of "potential" energy. And is not chemistry virtually compelled — and biology as well — to pack the molecules and atoms full of sometimes latent and sometimes active poten-

cies? But what are masses, molecules, atoms, in reality, when they have wholly ceased to be actors or agents; when, in respect of the entire sum of all their qualities and changing relations, they are *merely* "potential"? Just nothing at all. And no wonder; for if this true "core" of every reality is gone from any particular thing or mind, that so-called thing or mind is left quite too poor and helpless even to raise its voice in the claim to be "one among many" in a world of actual transactions between real existences.

Third: Reality is always connection according to some law. What these very words — "connection according to some law" — mean as applied to every real being and to every actual transaction, undoubtedly needs to be further explained. But our statement serves in a preliminary, though somewhat vague way, to mark out the lines for a metaphysical system. Substance and attributes, change and order, many and one, unity in variety, succession and the permanent, action and reaction, etc. — all these correlated ways of considering the answer to the question, What is it really to be? imply the same truth. The truth expresses the fact which our analysis has already emphasized: *Somehow, every being succeeds in harmonizing, by its actual existence, all the essential attributes and potentialities of all beings, in an ideal way.*

Where, then, shall one so disposed find material upon which to bestow the work of metaphysical reflection? Close by at hand, and beginning with anything, no matter how seemingly insignificant or mean. For every real thing is an example, or specimen, of the all-inclusive Reality. But especially by, first of all, arriving at terms of satisfactory understanding with one's self. For it is written: "He hath put the world in their heart." Does this mean, however, that I am myself, in my poor thoughts and conceptions, the complete and satisfactory measure of this all-inclusive Reality? By no means so; for you are yourself more than your own mere thoughts or conceptions; and the all-inclusive

Reality embraces you as a real and significant, but partial, manifestation of its Self. What shall be done with the contradictions that seem at once to emerge from the dark background of experience, and that threaten to break up the harmonious structure of the conception? Contradictions that are merely in *our* conceptions must be solved by an appeal to experience, and by the method of prolonged and patient reflection. Apparent contradictions, that are solved in actuality, belong to the very essence of the Reality which thus in its harmonious working presents man with something quite different from a merely logical system of agreeable ideas — presents him, that is, with the complicated problem of a World that *is* a Unity, although of no merely logical kind.

CHAPTER IV

REALITY AS AN ACTUAL HARMONY OF THE CATEGORIES

HAVING paid tribute at the throne of experience, as ruler over the thoughts and lives both of common folk and of the devotees of science, we may the more securely consider our problem, as it is embodied in more abstract terms. It is essential to any valid theory of reality that the metaphysician shall accept certain of the necessary forms of cognition in the faith that they reveal the actual forms of things. These necessary forms of cognition, which an analysis of cognitive experience shows to be the accepted forms of things, are the so-called "categories." This linguistic usage may be accepted, for want of any other single word which seems equally convenient and suggestive of the truth. How many and precisely what are the categories (in this meaning of the word) has been much debated by both logicians and metaphysicians. We need not now assume to enumerate or to discover them all. It is well known how Kant thought it possible to accomplish this preliminary task by making slight additions to the Aristotelian catalogue of the necessary kinds of judgment. Thus this great critic of knowledge was led to the discovery which, almost beyond all others of that really penetrating mind, gave satisfaction to his instinct for "pedagogical primness." Four classes; three in a class; three times four, — *i. e.*, twelve — and no more; such was the demonstrable list of the universal and eternal forms of the functioning of all human judgment in objective cognition.

There were, and there could be, in Kant's thought, no fewer and no more than twelve categories.

Nor is it necessary to notice, even for a brief criticism, the attempts of Fichte and of others to reduce the categories to a stricter unity; or the somewhat shifting significance which has been given to this and corresponding terms during the last century of philosophical discussion. In this discussion the colossal attempt of Hegel to present a complete theory of reality by treating the necessary forms of thinking as a living self-evolution is undoubtedly the most significant feature. Our aim is at present much more modest than was the aim of these three great thinkers. We wish to use the word in the meaning which has already been indicated: by *categories* we understand simply those essential forms of knowledge under which men perceive and conceive of all they call real. And concerning them we wish to illustrate and to enforce the following four truths: First, the categories are not separable either in thought or in reality, as are the concrete realities themselves. But, second, no single category is recognizable by an analysis of cognitive experience or is statable in thought, without involving the recognition and the conception of every other. Nevertheless, third, no category is completely resolvable into any other. Yet, fourth and finally, all the categories form a sort of interior oneness — a system which appears as a harmony to thought and is experienced as effecting a unity in the world of reality.

The more complete proof and illustration of these four propositions respecting the nature of the reality known to man must wait for the detailed discussion of the following chapters. The fourth proposition, in its assertion and application of the principles upon which harmony can be established among the categories, is necessarily the final task of all the discussion. But now, in a summary and introductory way, we wish to sketch a doctrine of the categories as the equivalent of a system of metaphysics. And here an

effective point of starting may be taken from the results of the analysis which has already been suggested. What, then, is it that any real thing — the rose-bush was our example — is known to be? IT — this particular being — is known as having a number of perceivable and conceivable qualities; as existing in a variety of relations; as changing in time and space; as having parts and being measurable and numerable and comparable with other existences under similar forms and ends, and in obedience to the same laws.

Now if we state the task of systematic metaphysics in a more abstract way, it is seen to concern these very conceptions which every particular being embodies in a concrete way. The meaning and validity, in reality, of Being, Quality, Relation, Becoming and Change, Time, Space and Motion, Force and Causation, Quantity and Measure, Unity and Number, Forms and Laws, — and whatever other conceptions can vindicate a claim to belong to the true list of the categories, — *are* the particular subjects for the student of metaphysics to consider. They are the essential "momenta" in his theory of reality. At present it is our intention to maintain the four propositions just laid down as true, in general, of these categories. Being, Quality, Relation, etc., to the end of the list, are conceptions inseparable in thought and "aspects" of things inseparable in reality; but each leads to the recognition of every other, without, however, becoming identical with any other; and yet they all show an interior unity, such as is actually presented to cognition in the world of real beings and of actual events. *And if, recognizing these truths as fact, we ask ourselves how they are made possible and made full of meaning, we get our clue to the true theory of reality.*

That the categories are not separable in reality, as the concrete realities themselves are, has already been shown in an analytic way. Every object of knowledge, whether physical thing or mind, in order that it may be known to be *a* (or one) real being, must be regarded as somehow separable from other

beings, no matter how closely allied in kind or intimately related in fact. This stone is "one thing," because it can be lifted from the pile upon which it is lying and conveyed to another place, without forfeiture of its claim to identity; and the same is true of every other stone in the pile. In the case of inorganic objects too huge and unmanageable for human force — as, for example, a mountain or a range of mountains — the discriminating act in perception or in conception performs the same office of separation. The mental act of discrimination makes the objects to be individual and actual things, on account of their perceived or imagined separability from other things. As the character of the known unity — that which constitutes it *a* real being — changes, the character of the separation which is possible in the case of any individual example of such unity changes also. Broken from the tree, the bud, the twig, the branch, is still for a time known as actually entitled to the name which has garnered the qualities of its "thing-hood," — but only for a time. The embryo torn prematurely from the womb of the mother is still an embryo; but it is soon no longer an embryo, and it becomes almost at once not a *living* embryo. In the case of that unique kind of a unity in reality which we call a mind, the essential truth of the principle upon which we are insisting remains unchanged. Its unity as *a* mind, and its separableness from other minds, are dependent upon its own analytic and synthetic activity. But the actualizing of this particular unity, and its separableness from other most closely allied unities, has other "stuff" to handle than that which is known in the case of any inorganic or organic thing.

The separableness of the categories in reality is not so. Stone, and bud, and embryo, and human self, are all alike actualizations of all the categories. And there is not *a* thing, or a single *one* mind, of which this is not also true. But to show this in detail would only repeat the analysis already sufficiently expanded.

That the categories are not independent and separable in thought appears more clearly as soon as we attempt to discuss thoroughly the second of the propositions made above. No single category is recognizable in cognitive experience or statable in thought, without leading to the recognition and the conception of every other category. The path is open between the categories. The Hegelian dialectic proposed to start from the simpler and more fundamental conceptions, and by moving forward on the path of a spiral, each successive part of which has an enlarging diameter, reach the heights of the Absolute Idea. But like every other system of evolution, when considered from the ontological point of view, this dialectic only evolved at the end of its thought-movement ideas that were involved at the very beginning.

Let this truth be enforced by taking as a point of starting any one of the so-called categories: Being in Space, shall we say? But by "being in space" — *really* and not merely in imagination — we must understand some particular Thing occupying some particular portion of space. For it is not space as a *mere* abstraction, which is to be considered, but space as a category, — that is, space as it is known, in application to real things. But nothing can be known or thought of as "in space," that does not define itself as "here" rather than "there." Its being at all in space, as all actual things necessarily are, involves its particularity; to be nowhere in particular in space, but everywhere in general, or to be "all over" space, is to be unknowable and unthinkable in terms of this category. But this particularity which every actual thing has, as being in space, is necessarily, in part, conceived of as a relation to other beings that are also in space. Relation in space, as belonging to real beings, is neither cognizable nor thinkable without implying movableness in space as an actual qualification of things. This is *here*, and that is *there;* but to be here, when another thing is there, is to be related to that other thing — "in space."

What more, however, is involved in being a particular real thing here and yet actually related to another thing over there — both things "being in space," and having movableness in space? At least as much as is involved in the being of the same particular thing, irrespective of its position and movableness in space. That is, its particularity consists, for our knowledge and for our thought, in the possession of an assortment of qualities which it shares in common with other things, but with a peculiar or unique form of combination. This particularizing of itself by having a peculiar combination of qualities is the feature essential for its being known as just *this* and no other particular thing, wherever situated in space, and however related to other things. But qualities cannot be known or thought, in connection with relations in space, without introducing the conception of other forms than the spatial form of relation. The possession of any particular quality makes necessary the introduction of a new example of the category of relation. Considered as having color, for example, all things are related under the quality of color; considered as having weight, under the relation of weight; and so on.

Being related and being movable, under the category of space, is known and thought of only as the validity of the category of change is recognized. Thus motion is customarily described as "change of place." The path open between the categories leads us from the thought of being related in space to the thought of change. But the particularity of things — the being, each one, this rather than some other — cannot be maintained if the category of change is limited to change of place. For any one thing, change of place involves a change of relations. When any one thing has changed its place, it can no longer be thought of as maintaining precisely all the old relations. But many qualities of things, at least, are so dependent upon the relations in space of the things having the qualities, that change in the qualities is the neces-

sary sequence of a change of their relations in space. Points of view do really determine changes in the qualities of things. Now if any objector maintains that while this is true of appearances, it is far from being true of realities, we must recall him to the line of argument which we are following. We are not speaking of change as an abstract and mystical conception having no reference to men's experience with realities; but of the category of change as men know it to be applied to actual things, in terms of this experience. And we repeat that, considered in this way, the conception of a real thing changing its relations to other real things in space necessarily involves certain changes in the qualities of that thing. Such a change forces upon our thought the being of the thing as holding a different set of relations to the system of things. The thing that changes its position in space must always play another part from that which it formerly played within the world-system. And this it cannot do without developing, so to speak, certain new qualities or ways of asserting its own continued existence.

The truth of the statements just made will be enforced and expanded, if we return to them by a somewhat different path. This may be done the more easily by introducing a substitute for one of the phrases which has already been frequently employed. "To be (really) in space" and "to occupy space" are not, perhaps, precisely identical thoughts. But if these two thoughts are referred to the actual cognitive experience in which they arose, the former is seen to involve the latter. *Really* to be in space is not merely to place the idea, or conception, of some particular thing ideally inside of an abstraction called "empty space." The inclusion and exclusion which men intend by such terms are no merely logical affair. When plain but serious people ask us, in somewhat vulgar English, whether we have any "idea" that so many men can be got into a room of such a size, they are not interested in a merely logical or grammatical puzzle. What

they wish to know is whether, when the test of fact comes, such a number of solid, "non-squeezable" bodies will, under the appropriate actual relations, *occupy* thus much or more of space. For practical purposes, each thing is "in the space" which it occupies. If it can in any way be made to occupy more or less of space, then *it* becomes larger or smaller in space. Whatever ceases to occupy any space, either for perception or for conception, that ceases to exist in space. Nor is the propriety of substituting "the occupying of space" for the "really being in space" spoiled by any of the discoveries of physics and chemistry respecting the porousness of masses, or the separateness of the atoms within the molecule, or the universal diffusion of ether within the seemingly space-filling portions of ordinary matter. Here, then, undoubtedly lies open one path which leads us straight to another nest-full of categories. These are such as men express by the words "activity," "force," "causation," etc. To occupy space is to resist force with force; it is for the being *A* to keep the being *B* out of the place *X*.

Let it be noticed, however, that we have long since passed over divergences in the path by which such categories as those of quantity and measure, unity and number, might have been reached. Really to be a particular thing in space is necessarily to have magnitude and to be capable of having some standard of magnitude applied as an actual event, in conception if not otherwise, with an accompanying process of numbering the successive applications of the standard. To be *a* thing is an impossibility, either to cognitive experience or to thought, without a certain measurable extension in space; and also without implying the actuality of numerical relations to other things. Motion also is impossible, either as an event actually perceived or as an occurrence rendered possible barely to thought, without implying the categories of quantity and number. Indeed, it is this necessity of asking the questions, How much? and How many? which compels

the physicist to attribute "mass" to all matter as its most essential and universal characteristic.

How conformity to law and, so to speak, compliance with ideal ends, on the part of the changes and the enduring relations and qualities of every thing, are necessary "momenta" in the very being of that thing, it requires a more special analysis to show. This analysis will be undertaken at the proper time. It is enough now to remark that while change is necessary to the being of any particular thing, unrestricted change destroys the very conception of a real thing; change without limit amounts to an annihilation of the real being subject to such change. Any being, A, may retain its claim to reality as some particular thing, while it passes through a succession of more or less important modifications, such as A_1, A_2, A_3, . . . A_n; and there is nothing but experience to tell us how far A_n may be a departure from A_1, without destroying the very existence of A. But no thing can maintain its claim to continued existence under the name A, if it begins to run through such a series of changes as are indicated by B_1, B_2, B_3, . . . B_n. Here, then, is plainly the conception of law and of final purpose at the very heart of every reality.

That time is a form of cognition which is essential to the very construction of all concrete realities admits of no doubt. The path to this category, too, has lain open at every step in the course we have been traversing. Really to be in space each thing must vindicate its claim by occupying space through a certain amount of time. Actual movement in space can neither be known nor thought except as involving the category of time. Things that move, or are conceived of as movable, must be *now* here, and *afterward* there. The popular definition of movement as change of position emphasizes a similar necessity to thought. And, indeed, the category of change itself — whether of position, or of relation, or of quality, or of state — implicates the reality of time in such manner that the first beginnings of a frame-work for the former

category require, for their interpretation, the admission of the validity of the latter category. Change that is not really in time is empty abstraction; actual change can take place only in time. What is meant by "being really in time" is a problem which demands a metaphysical solution; but whatever is meant, just that, at the least, is an indispensable condition of all actual change. Neither can men know the qualities and relations of things, whether the more transient or the more permanent, without conforming to the category of time. The path to this category lies open at every step for the mind which seeks a systematic doctrine of the categories.

But the same truth might be as well illustrated by taking any other category as our point of starting. From whatever one of the various points of view we begin the survey of the corresponding aspect of reality, what is seen from this point cannot be exhaustively described without surveying all the aspects of reality. In the actual growth of knowledge, both for the individual and for the race, this observation proves itself true. The different pursuits of the individual, and the growth of the different sciences in the history of the race, furnish grounds of selection among the possible points of view. For the mathematician or the tradesman, the categories of quantity and of number are most impressive. For the student of physics and chemistry, for the machinist and manufacturer, these categories with the added conceptions of causation and force. But in their treatment of concrete realities both mathematics and physics are compelled to fix their eyes on the actual relations and qualities of things in time and in space. While law and final purpose, "ruling over" and "dwelling in" things, are of eternal, practical and ethical interest to all men. If, then, geometrical figures be employed in illustration — the system of the categories is not to be compared to a thin straight line, or to a curve returning continuously upon itself, and running from pure Being to an all-comprehensive Idea. Neither is it a pyramid or cone, erected

and brought to a condition of equilibrium when resting upon either end. It is rather a constantly revolving, perfect, and transparent sphere. Whichever aspect of this sphere is first presented to the eye, one enjoys the opportunity of seeing, not only what this aspect is, but how this particular aspect stands related to the entire sphere. The Hegelian path, with its heavy, monotonous "*tit-tat-too*" tread, from *Seyn*, through *Wesen*, to *Idee*, — taking *Daseyn*, *Fürsichseyn*, *Quantität*, *Maas*, etc., etc., in regular order by the way, — is by no means the only path open between the categories. Every one of these conceptions leads to every other, obviously enough, if not with an equal directness. And no one of them alone presents the mind with a valid and complete picture of the reality of even the meanest thing. Nor can any one of them be deified, as it were, and made the equal of the All-Reality.

And yet the third of the propositions already laid down is equally true of the categories. No one of them is analyzable into any other. If a separable and independent existence or application to the whole of human cognitive experience must be denied for each, on the contrary a sort of independence must be maintained for each. To uphold this claim successfully requires such detailed discussion as it belongs to the different chapters of metaphysical system to give. But the nature of the discussion is itself a sufficient proof of the general truthfulness of the proposition. For example, it has already been shown that we cannot interpret satisfactorily the cognitive experience of men with any particular thing as "*really in* space" without recognizing also the fact that the same thing is known as "*occupying* space." And thus the path lies open from the category of Space to the category of Force. But force cannot be resolved into space, or into motion or change. Our thought puts this conception of force, as exerted by the thing, into the very nature of that thing as affording the explanation of the phenomenon called "occupying space." The cause of the things occupying so

much of space is the character and amount of the force of the thing. The cause of the thing's movement or arrest of movement in space, and the cause of all its other changes of states and relations, is some kind of force, somewhere seated, either within this thing or within other things. Thus does the mind work around from category to category, as its experience assumes the different possible points of view. *Force* — that is to say — is "in" the *relation*, "of" *cause*, "to" *motion*, "in" *space*, and "in" *time*, and "of" every other *change* "in" the *qualities* "of" any *being*. But each one of these prepositions ("in," "to," and "of") is designed to mark some sort of a relation; and each of the relations which each of the prepositions marks implies the application of the category of force to the solution of the problem, What is it really to be? in a somewhat different way.

Let the effort be made, however, to resolve the category of force into any of the other categories, to which it seems itself related in such manifold curious ways, and how unsatisfactory the result! This is, indeed, an attempt which has often been made in the past, and which is frequent and fascinating enough at the present time, both among physicists and among metaphysicians. It will receive the detailed criticism which it invites, at the proper time. We are frequently presented with such conceptions of individual realities as that, for example, at which Uphues[1] arrives: "Things consist for us," says this author, "of the sum of the properties which we learn to know by the senses, that with approximate regularity occur at the same time with each, and appear as belonging together. They are the constituents of things (*Bestandtheile*), because of this regular recurrence and belonging together." The conception of force, as well as the conception of essence, in its application to the reality of things, Uphues then sets aside as barren and useless. Now in this way one may doubtless arrive at a descriptive cata-

[1] Psychologie des Erkennens, p. 2.

logue of those sensuous qualifications which any particular thing has for us; and which enable us in terms of sense-perception to define what is that particular thing as capable of being sensuously distinguished from other things. But to constitute such a "consistency" of things, by exclusion of the conception of force, is to cut the very heart out of the reality of the thing. For it is only as some sort of a centre of being, on which may be concentrated the active energies of other things, and from which active energies may proceed to terminate upon other things, that any particular object indicates to thought its claim to reality. To be sure, all language like that just used is figurative; and the real transactions that correspond to it need further to be investigated. But its figurative use is at least necessary in order faithfully to express all that every particular real thing is known to be. Nay! its figurative use reminds us of the very gist of the reality which each particular thing is known to possess.

The vacillation of modern physics upon the point of this category is an instructive spectacle for the metaphysician. If it takes place in a controversial way, it shows that the thrust of the spear has reached a vital part; and the whole body of science is thus set quivering with the deadly wound. In fact, one fundamental form of modern physical theory would reduce all our most ultimate cognitions of matter and of physical changes to terms of force. But another form of physical theory will hear nothing of force; it would willingly exclude any such entity or essential manifestation of an entity from the valid conceptions of modern science. We will not just now press the questions: What, in the first case, becomes of science as dealing with concrete realities? or, What, in the second case, becomes of science as having to do with causes? We will only call attention to the fact that, with the banishment of this conception, all the genuine dynamics (not to say the dynamite) is gone from man's view of the physical universe. Things become pale shadows, trooping here and there

in a fleshless and ghostly fashion, — all life departed from them. When the category of Force, and its allied category of Cause, leaves the world of reality, how do its objects differ from the most unreal of mental images, from the uncontrolled mental train of dream-life ?

On the other hand, we find ourselves equally unable to resolve any of the other categories into the conception of force. No amount or kind of mere force could produce either time or space, as these two conceptions are found to belong to things in our experience with them. I may think, indeed, of the actual things, or of the Absolute Being which I conceive to be the Ground of things, as the force or cause that compels me to cognize external objects under space-form and time-form. I may find myself induced to acknowledge that the ultimate cause of my apprehension and thought of all things as spatial and temporal is the influence — or force exercised — upon me, of the World-Ground. Or, to adopt for the moment the Berkeleyan hypothesis : the being of things — all the being they have as *things* — is their being perceived by me and by other finite minds ; but their being in reality is their being willed by God, in an orderly way, to arise in my consciousness and in the consciousness of other men. But this appendix — "in an orderly way" — introduces something more than *mere* force ; and it defines vaguely the terms under which must fall, and actually do fall, all my valid cognitions of real things. Nor is this simply "*an* orderly way ;" — as though *any kind* of an orderly way would equally well answer to my experience. There is one kind of an orderly way, which is time ; and another kind, which is space ; and there are as many kinds of orderly ways as there are so-called laws, maintaining themselves over or between things, and thus keeping the things in order. From our present human point of view, these ways are innumerable. But those particular orderly ways which men call "space" and "time" stand in very different relations to our cognitive experience

from the relations in which stand the many physical, chemical, and biological ways of the ordering of things. Space and Time are categories; and the laws of gravitation, or of chemical equivalence, or of biogenesis and development, are not categories. As categories, space and time maintain a peculiar kind of independence,—suffering themselves to serve as paths along which we may pass from one category to another, and yet refusing to be absorbed in any of the other categories.

While, however, all the categories correspond in a general way to the three propositions made above, there exist many curious subordinate interrelations amongst them. To use again the figure of speech which has already served the same purpose: The path is indeed open between all the categories, and the course of reflective thinking permits and requires free movement from each one to every other; but the path is not equally direct between them all. These fundamental conceptions divide themselves into certain pairs and groups which seem to be more nearly contiguous, one to another. An historical study of the whole subject would show how both a naïve and a critical ontology have found themselves compelled to consider its problems in accordance with this truth. The popular thinking connects together the conceptions of substance and attribute, of magnitude and number, of force and cause, of space and time, of law, or a certain orderliness in behavior, and of an end to be reached by obeying the law.

The "Critique" of all cognitive faculty, which in its author's profound judgment would so describe and arrange the categories as that this work would need henceforth no supplementing or amendment, divided them into two great groups. In the first of these groups were space and time, the *à priori* forms of all presentative knowledge (or sensuous "awareness") of things; and the critical doctrine of such knowledge was summarily dismissed with a few pages, full of uncriticized assumptions on so-called "Transcendental Æsthetic." The other main group comprised the twelve re-

maining categories; and these are the *à priori* forms of all those judgments about things which constitute the sum-total of experience. They fall naturally into four subordinate groups of three in each group. The exposition and justification of this system gave the critic, according to his own confession, a great amount of trouble; and the manner of its being accomplished has given his readers no little trouble ever since. But the important truth now to be noticed is that, somehow, peculiar and curious interrelations of a more or less orderly kind are always found by the analyst to exist among the categories. Kant himself, after all his labor to answer the question of right (*Quid juris?*) and so afford a satisfactory "Deduction of the Categories," does not even raise in satisfactory form the most fundamental and interesting critical question of all. Why should these conceptions divide themselves up in this particular way, unless some deeper-lying principle belonging to the world of reality can be discovered to account for the division itself? On the psychological and epistemological side, the reasons for any such pairing, or grouping, of the fundamental forms of cognition must be found in the very nature of cognition itself. *But regarded from the more distinctively metaphysical side, the reasons must lie deep in the very nature of Reality.*

Since we have now been led to thoughts which depend upon combining the third and the fourth of our general propositions respecting all the categories, they may fitly be illustrated by an example or two. Either one of the several examples already enumerated will serve to illustrate this singularity in the structure of human knowledge. Undoubtedly, magnitude and number constitute a sort of pair among the categories which sustain certain closer than the customary relations to each other. Neither precise knowledge nor logical thought about things in terms of quantity is possible without immediately introducing terms of number, as a sort of twin vehicle to the necessary mental processes. How large? is a

question which can be definitively answered only in terms that imply counting. But, in turn, the question, How many? implies some sort of measurement and consequent delimitation of each thing which offers itself to be counted in making up the answer to every such question. The psychological explanation of this "pairing" of the categories of quantity and number is undoubtedly to be found in the actual use made of the faculties in measuring and numbering things. Vague notions of larger and smaller, of difference and sameness of direction do not indeed depend upon developing the power of "enumeration." But precise measurement of things, whether for practical or for theoretical purposes, is impossible without counting; nor can we count things without some, at least, rough and preliminary measurement of them. If this fact of experience is to enter into a theory of reality, it must appear that there is something in the nature of things which serves as a ground, or warrant, for the close connection of these two categories in man's cognitions and in all his reflective thinking. That is, it must be shown that the measureableness and numberableness of concrete realities are interdependent, and yet not identical, aspects of things. And it needs finally to appear that *the Unity which a systematic metaphysics discovers in Reality is, so to speak, the bond which brings these categories into their actual close relation.*

Another example of essentially the same truth may be found by the critical analysis of the allied conceptions, space and time. These two so-called categories are not, indeed, a "pair" in the same sense in which this word may be figuratively applied to quantity and number. But analysis of the cognitive experience which actually connects them discovers many curious relations between them. How the mind finds itself compelled to make use of terms that primarily apply to space relations in order to express relations of time, is too well known to need detailed illustration. Yet "contiguity," "extension," "equality," "movement," etc., as applied to

temporal relations, stand for conceptions which contradict the most important characteristics of the same terms as applied to spatial relations. You can neither actually, nor in thought, bring two times that are separate from each other into contiguity; nor can you conceive of them as actually moved and superimposed so as to demonstrate their equality. The line of time violates the most important condition which is observed by every line drawn in space: its successive parts do not "stay put;" since their very essence is that they shall succeed each other in their real existence — whatever the nature of this existence may be found to be. On the other hand, neither experience nor thought can present things as contiguous, or as extended, or as moved in space so as to show their equality or inequality, without dependence upon the category of time. All occupying of space, or change in space, must be known as an enduring or a succession, in time.

Like a brooding and fostering nurse, or rather like a prolific mother, does Relation itself stand related to all the other categories. No other one of these forms of cognition appears as so ubiquitous in presence, and yet variable in character. Nothing static is there about actual relations; although relations themselves are to be conceived of only in case we can, for a moment at least, fix and render stationary the ceaseless changes of qualities, states, and positions in space. Of this experience the psychological genesis is undoubtedly to be found in the fact that knowing itself, on its intellectual side, is essentially a relating activity. More on this point, however, would be to anticipate what must be said later.

The significance for any consistent theory of reality of such curious interrelations amongst the fundamental forms of knowledge has received far too little attention hitherto by students of systematic metaphysics. It is well enough, indeed, for the students of the positive sciences to take these interrelations for granted. But what do they have to tell us about the nature of the World as a Unity of concrete realities

constituted under terms of an order so mysterious and exciting to philosophical reflection? What sort of a Reality must that be which can alone harmonize these differences and seeming oppositions among the categories, while allowing to each its independence and its proper place within the unique system? It is the answer to this inquiry which we hope to furnish by subsequent detailed discussions.

The partial unification of the categories, as pairs or subordinate groups, fitly leads our consideration to the fourth proposition. All the categories, when considered as forms of knowledge, constitute a sort of interior unity; and when considered as forms of the existence of things, they demand some theory which will expound the Nature of Reality as a harmonious and unitary system. On its epistemological side, no one ever saw this truth more clearly, or labored more diligently to expose and defend it, than did Kant. But since his systematic metaphysics was simply an orderly exposition of the categories regarded as mere forms of cognition, his theory of reality could not be founded in man's total experience, but only in man's practical needs. It was ready-made for one who would save his faith, by agreeing to surrender the hope of knowledge. For us the actual unity which the forms of all men's cognitive experience achieves, more or less perfectly, seems to demand and to warrant an explanation which shall reveal the very nature of reality. The world as known to man — and here we agree with Kant in saying that this is the only world with which metaphysics can deal — is some sort of a unity. To answer by reflective treatment of the categories the question, What sort of a unity? is a supreme problem for metaphysical system.

Three views are possible as to the relations between themselves sustained by those forms of cognitive experience which naïve common-sense and the positive sciences alike agree to accept as applicable to all known realities. The categories may be regarded in an individualistic way, as it were; they

may be taken simply as accidental and unrelated entities, or forms, or laws, of things, which are to be accepted without recognition of any necessity for further critical thinking. But to continue in this point of view is to refuse to philosophize. From this uncritical position that strange circle in actual cognition — namely, trans-subjective existence is implicate in experience, but experience itself assumes, for its own explanation, such existence; or being and knowledge are related in such manner that neither can be regarded as a point of starting independent of the other — offers no problems worthy of reflective consideration. As soon, however, as the different categories are studied in a comparative way, the recognition follows of some kind of relations among them which demand a persistent effort at harmony. The result of this effort may be a certain doctrine of antinomies, or fundamental and irreconcilable contradictions among the categories. And this is the second of the three possible ways of viewing the forms of human cognition.

This doctrine, that the categories show irreconcilable contradictions, may be held and expounded in any one of several different ways. There is, for example, that earlier form which belonged to the Greek scepticism, and which has ever since furnished puzzles for children and for somewhat childish adult minds. In fact, and as tested by man's experience with real things, Achilles does overtake the tortoise; the arrow does fly from the bow-string to the mark; and every single being is known under an indefinite number of diversified qualifications. Yet Zeno and Heraclitus go on disputing. And by refining abstractions of Space, Time, Motion, Quantity, and Number, it is demonstrated that no one of these well-known events can in reality possibly be.

How Kant regarded the categories, from the subjective point of view, has already been made the subject of critical remark. They constitute, in his view, an orderly system, with the unity necessarily belonging to the product of a mind;

that is, both sense and understanding are brought into harmony of action by the mediation of imagination. Thus the system of known realities attains a partial and dependent kind of unity; because it is itself nothing other than the product of the continued activity of mind — upon the raw material of unorganized experience. Further, the service of an illusory dialectic succeeds in bringing these organized experiences *toward* but never into, the unity of the supreme ideas of reason. The moment, however, we try to regard the categories as applicable to trans-subjective realities — to what Kant calls *Dinge-an-sich* or *Gegenstände überhaupt*, — the most stubborn and irreducible contradictions arise between them. They now become "paired off" in no amicable fashion; the rather are they divided off against each other, as thesis and antithesis, and made ready for an internecine war. The case is as though the principle of tribal "blood-revenge" had been let loose among the categories. Out of their legitimate territory any one who will may destroy them and have no account to render at the bar of metaphysics, of ethics, or of religion.

But the critical work of Kant with the categories leaves at least a certain large and comforting remnant of knowledge. Within their proper sphere they act in harmony; and to the critic, as well as to the user of them, from the Kantian point of view they appear as a most wonderful and orderly, yet mysterious system of forms. Neither is it warrantable to speak of the world which they result in producing as the realm of mere "Appearance;" it is rather the world of known realities, although of phenomenal realities. Moreover, by other avenues of approach we are to be given enough of faith, if not of knowledge, that shall disclose the practically acceptable constitution of that Ultimate Reality to which the categories do not apply. By the work of critics like Mr. Bradley, however, all the Kantian categories are thrown into the most determined and irreconcilable conflict, within that very sphere

within which Kant himself held that they constitue a perfect and harmonious system. That is to say, when the attempt is made to apply the forms of cognition to the concrete realities of our experience, they show such internal contradictions as compel the belief that these realities themselves are *mere seeming*. And thus the doctrine of antinomies, as inherently irreconcilable oppositions among the categories in their application to the actual concrete cognition of men, returns to essentially the same form as that given it by the ancient Greek scepticism and agnosticism. All known real things are now at "loggerheads" with one another. And *the* Reality becomes identified with the unrelated (the "uncategorized" — if we may be pardoned such a word) One.

It is the third view touching the relations that exist between the categories which it is our purpose to maintain. They are not to be considered as disconnected and unrelated forms either of knowledge or of being, — picked up haphazard and adopted as though no mutual understanding or common significance were presupposed. Neither does any fair criticism, however searching, show internal and irreconcilable contradictions among them. The rather are they, both when in use for actual work-a-day or scientific knowledge and when, in hospital, lying under the scalpel of the analyst, a beautiful and wondrous system. They do not need to be actually systematized by logician or metaphysician. The surgeon's knife, whether his subject be alive or the dissection be *post mortem*, does not create the organism. A sort of organic character, a unifying life, belongs to the categories: the result of analysis is to discover it there. And the entire task of systematic metaphysics is not accomplished — it is scarcely properly begun — until a sympathetic insight into the truth of reality has operated in a synthetic way to reconstruct in theory this actually existing harmony.

The fuller proof of this comparative doctrine, which asserts a significant interior unity as belonging to all concrete appli-

cation of the categories, must await for its details the conclusion of our work. Indeed, the whole circle of proofs takes us beyond the limits even of a general system of ontology; it demands a reflective treatment of the ideals of conduct, art, and religion. But the ultimate grounds on which these proofs rest, and from the exploration of which the proofs proceed, are all laid in man's indubitable cognitive experience.

First, then, the unity of the categories is proved by the fact that every act of knowledge results from the harmonious union of all these forms of knowledge, and thus gives to the mind an object of knowledge which is itself a concrete example of their real union. The rather may it be said, that, down below all proof, and so too deep for proof, lies the nature of the process of knowledge itself. This process, as experienced and not proved, *is* actually a unifying actus of mind in which all the activities of mind harmoniously take part. The object known *is* actually a being that answers the quest for unity by presenting itself to the mind as real, and really possessed of the categories. Every known existence is characterized to thought by the categories in a unifying way; because it is constituted in reality as a unity of the same categories.

Second: The unity which the development of all the particular sciences is giving to man's conception of the real world is a further proof of the unity of the categories. But this proof, too, — strictly speaking, — lies down below all proof, and yet is the surer because its foundations are too deep for proof. It is a sort of faith in the world's unity which is only partially based upon experience. The great fact in the scientific progress of the race is its tendency toward unification, — its growth toward a unitary conception of those diverse realities and their manifold connections which are given to every individual and to every generation of men. More and more continually is the complex of things and minds conceived of by man as a *Cosmos* — an orderly Whole. Hasty generalizations abound and always have abounded, often to defeat tem-

porarily the very end at which they were themselves aimed. Exceptions exist to all, or nearly all, known laws. Irregularities occur which compel science to suspect or to modify its most select formulas. The particular departments of human knowledge set up their sometimes sharp and petty controversies for supremacy; or they proclaim good-natured offers to effect a harmony on terms of surrender without reserve. And yet the time comes when these sciences must stretch out hands toward each other, and confess: "We have erred; but come now, for we are brothers, and why should we not help each other and dwell together in unity?" Now even if this progressive unification is a manifestation of the illusory dialectic which Kant wished to chasten, it is nevertheless an actual result due to the growth of human experience by way of an increasing knowledge of the real nature and actual relations of things. And if it is a real growth of *cognitive* experience, — in any defensible meaning of the word "cognitive," — then the real world is more and more known as some sort of a Unity. This Unity in Reality *is* that actual harmonizing of the categories which, from the ideal points of view, is so satisfactory to human reason.

But, thirdly, the unity of the categories is shown by the results of a considerate and yet critical examination of the categories. To effect this examination in detail is the task more immediately before us. Any success in this task ought to show that lack of harmony, or apparent contradiction, amongst them results either from insufficient analysis or from a misleading dialectics. It is, we believe, in every case, the distorted abstractions of the metaphysician, and not the actual forms of cognitive experience, which refuse to harmonize with one another. To make peace is better than to make trouble; to unite in thought that which goes together in knowledge and in reality is more honorable than to separate between friendly and allied conceptions. The former is, indeed, the harder thing to do. It is always easier to display

the imperfections, limitations, gaps, and disastrous pitfalls of the human mind, than to give a sympathetic and appreciative interpretation to the common facts of man's experience with himself and with external nature. But if the task is greater, so also is the reward of its accomplishment.

At the close of these introductory chapters we sum up certain conclusions already reached, and briefly set forth the principal truths which it is our aim to establish.

Systematic metaphysics is a proper subject for the philosophic mind; for it is nothing worse or more impossible than the effort to subject the facts of our cognitive experience touching the nature of reality to a critical examination by reflective thinking. As ontology it takes a positive and fairly hopeful view of the epistemological problem involved; supposing that this is not a task impossible for man, it undertakes that task with a sober confidence in human reason. But it continually insists on bringing its reflections and insights back to the testing of the facts disclosed by ordinary experience and by the positive sciences.

Since real beings furnish the field for metaphysical research, and the metaphysical problem is faithfully to characterize the real according to the accepted forms of all cognition, we recognize a distinction between "appearance" and "reality." But this distinction cannot be so set up and carried through as to divide the cognitive faculties, or the results of their activity in the evolution of knowledge for the individual or for the race, into two separate parts, to be called by these two names. On the contrary, we find the very word "appearance" most highly significant of the nature of reality.

When the student of metaphysics directs his attention to that one word, Reality, which is employed somehow to gather together and express the whole field of his research, — the subject he wishes to get at, — he finds this word, of all others, most rich, and yet somehow vague in content. But since he cannot investigate the infinite particulars with which the

different branches of human knowledge have to do, he raises the more general question to define his problem: What is it really to be, as all things and mind are in their varying relations, transactions, and qualities? This general question must be answered by a reference to those universal forms of knowledge which men accept as the forms of real being — of the minds and things that really are.

Thus, then, to study the fundamental data of human cognitive experience, and to reduce them to a unitary conception which shall provide for all the varied realities of the world in some harmonizing way, is the task of the student of metaphysics. His conclusions will have the value — and only the value (although why should this be considered a small thing?) — of a tenable Theory of Reality.

The detailed exposition of such a theory, which will now follow, involves the discussion and illustration of the following fundamental truths. Each of them is a truth which has its roots in the primitive facts and in the maturer growths of knowledge, but which is also ontological in its nature and application. First: All the categories are forms, both of knowledge and of being, that are actually and indubitably realized in all our cognitive experience with the Self. I am a Being whose existence and whose self-knowledge is constituted a Unity, because I am a self-conscious Self. Second: All the real beings which are known as Things, together with their attributes, changes, relations, laws, etc., are made actual in our cognitive experience only as there is projected into them, so to speak, the same forms of Being which I know the Self to have. The categories, so far as they can get any recognizable meaning in their application to actual things, are the same categories as those under which we know the Being of the Self. Third: The Unity in a world of Reality which all things and all minds have is known in terms of an all-inclusive and Absolute Self. Only the conception of "Self-hood" can bring into actual and cognizable

Unity that complex of concrete realities which both the work-a-day and the scientific experience of the race contains. And this unifying conception is properly held by the mind, not as a *mere conception*, but as the ultimate form given by reflective thinking to our *knowledge* of Reality.

CHAPTER V

PARTICULAR BEINGS AND THEIR QUALITIES

It follows from what has already been shown that none of the fundamental forms of knowledge and of reality can be critically examined without more or less of implicit reference to all the others. For the actual system of things which we call the "World" as known to men is no mere logical arrangement of mental forms, but the vital and interacting unity of an infinite number of particular realities. And moreover, each one of these particular realities is itself a sort of actual system, or actualized unity of all the forms of being. It is therefore impossible to say all that particular real beings, with their entire outfit of qualities are, without discussing all the categories. But just now a problem is before us which must be more closely defined; and if it were not for certain objections, — mostly verbal and historical, rather than essential, — the definition of this problem might be expressed in terms of two allied conceptions. These two constitute a sort of pair, the first of which (curiously enough) is particularly shy of yielding to any fixed and apprehensible terminology. Every particular real being — let us say tentatively — is necessarily a *substance* with *attributes*, a subject of many states, an existence which does and experiences various changes or has various qualities. To adopt the uncouth language of modern science, which here corresponds to that of Aristotle, it is a "that-which," existing under an indefinite number of conditions and relations, that require to be determined by telling stories about the "what" of the same thing. Its "that-

which" is assumed or "posited" by science; its "what" is described by science.

The most scanty reading in the history of metaphysical speculation shows how much debate has been had in the past over the conception of "Substantiality." Or, without essentially changing the thoughts involved, we may substitute for this word the terms "pure being," "being as such," or *Ding-an-sich*. But the current metaphysical or *anti*-metaphysical literature shows how distasteful and unpopular, even in scholastic circles, all such abstract terminology has now become. This is, no doubt, partly the result of the crimes against both experience and clear thinking which have been committed in the name of this conception. These crimes are certainly neither small in magnitude nor few in number. But perhaps it is time to call off from this hunt the attention of minds seriously disposed to analysis and reflective thinking; and to remind them that such words as "substantiality; "pure being," *Ding-an-sich*, etc., at least represent many an honest attempt at solving the mystery of existence. Nor do we consider it self-evident that some of this hasty scorn in the current psychology and philosophy may not be due to a certain popular shallowness of thought and of speech. At any rate, it is certain that the most radically destructive assault upon the old-fashioned category of *substance* can only have a negative result. Its criticism is, at best, only pioneer work; it removes obstacles and clears the path; but it plants no seed and harvests no crop.

The truth remains that there *is* in all human cognitive experience a persistent and ineradicable something which corresponds to the metaphysical term "substance." This something is always posited as necessary to the actual existence of any thing, or of the whole world of minds and things. The denial of this something is the one bare asseveration of the current phenomenism which shows conclusively the insufficiency of its analysis of experience; which puts it into

irreconcilable conflict with the common-sense of mankind, with the assumptions and conclusions of all the particular sciences, with the inferences that flow from the language and actions of men, and with all the most abiding and trustworthy conclusions of the world's greatest thinkers. This denial also makes the psychology and the philosophy which espouses phenomenism an object of little esteem, except among the small group of scholastics with whom it is current.

Use, then, what terms the metaphysician will, he must reckon with the same ontological problem. Such words as "substantiality," "pure being," *Ding-an-sich*, etc., and the conception corresponding to them, have been so persistent in philosophy that something actual and universal in our human experience must be recognized which corresponds to them, — so persistent and expressive that something to correspond must belong to the very nature of reality.

Every particular real Thing is a substance with attributes, a being that has qualities; every "phenomenal existence" implies as its ground, or cause, some *Ding-an-sich*. Every concrete reality is possessed of qualities; or every actual existence *has*, and *not merely* is, the perceptive or the logical totality of its qualities. So that to be real requires the recognition of something besides a more or less persistently recurrent group of connected phenomena. The "thing-hood" of each particular thing is more than the mere sum of its qualities. These are abstract and now old-fashioned ways of expressing one of the most difficult problems which meet the student of metaphysics. We are going for this reason, as much as possible conveniently, to avoid them. But the problem which has so often been expressed, or even apparently solved, in these and similar phrases, compels us to raise a number of questions like the following: Why does such a conception emerge at all in consciousness? What that cannot well be questioned, and is fundamental in human cognitive experience, corresponds to

this conception? What does critical examination learn of this conception which is adapted, so to speak, to apply to all that men call real — both minds and things?

If any of the questions just raised be taken before the "plain man's consciousness," we can obtain — no matter how persistently we question it — only very unsatisfactory replies. The unanalyzed judgment and language of men insists on maintaining this mysterious conception of "substance" or "real being;" but, on being pressed to explain the conception, it can only repeat the mystery, either with what amounts to a dumb show of gesturing or in some obscure figures of speech. This is chiefly true, however, only of physical things; it is less true by far of the Self. And for the mind upon which the full light of a reflective experience has shined, doubt about the substantiality of the Self is impossible.

"Sensuous experience" (*Sinnliche Empfindung*), says Lotze,[1] "has always been looked upon as that ground of cognition which is our warrant for the presence of real Being." Another writer goes so far as to declare that "sentient experience, in short, is reality, and what is not this is not real:" But Mr. Bradley's phrase is much the most comprehensive, for it is immediately defined by him in this more expanded form: "Feeling, thought, and volition (any groups under which we class psychical phenomena) are all the material of existence."[2] Such a declaration as this must be accepted as final if we may be allowed to give it the following shape: *In cognitive experience all we can mean by reality is implicated.* If, however, appeal be made to this experience in its uncritical form the answer will no doubt take its point of starting from the sense-perception of things. Ask the "plain man" what it is in that particular thing which makes it *real* to him, and he will begin to pass in review his sensuous experiences. It — the "thing" — is to be seen as having such a color and as

[1] Metaphysic, Book I., chap. i., § 2.

[2] Appearance and Reality, p. 144.

being so large and so shaped; to be felt as rough or smooth, light or heavy; it is known to have such other properties and a variety of well-known uses; and, perhaps, to have such a name and to belong to such a familiar class of objects. The proof that any particular answer "*as to what*" the thing is has been correctly given must be taken back in detail to the renewed testing of the senses of the same person, or of the senses of other persons. And if persistent doubt arises concerning the correctness of the first answers, then if the thing endures for some time "substantially" (as it is naïvely said) unchanged to sense-experience it may be considered to have dispelled any doubt over the reality of its existence.

But now let appeal be made to this same uncritical experience with the inquiry whether the reality of any particular being consist *merely* in the continuance together, as a fact of sense-experience, of some group of sensuous qualities. It will be somewhat difficult, indeed, for the plain man fully to comprehend such an inquiry. But sooner by far will he credit the tale that any most solid thing has ceased to be, and even that its entire substance has passed from the world of real beings, than credit the supposition that, so long as anything is known to be, its reality can be fully conceived of as a mere "bundle" of qualities put together in his own sense-experience. You may easily convince him you have "burned up" the tree he saw yesterday; but you cannot convince him that the tree he sees to-day has no trans-subjective reality. Annihilation of things is much easier credited than their mere subjectivity.

Now here, indeed, is a strange puzzle proposed to metaphysics by the popular way of regarding real things in all the more primary acts of human cognition. The particular thing is always known to men only as it has certain specific qualities; it may be conceived of, actually known, to have disappeared from existence with all its qualities; but so long as it really does exist, it cannot be merely a grouping of qualities. In other and figurative language: in order to be a thing, there

must be an actual "point of attachment" for the qualities; and this point of attachment must be conceived of as enduring throughout the real existence of the thing. Only thus is any particular Being able to produce the conviction *that* it is; otherwise all our knowledge concerning *what* it is would not amount to endowing it with reality. Indeed, its reality is no endowment of our cognitive faculties; whereas its qualities may be considered as the way in which it is known by these faculties.

If now the physical and natural sciences be inquired of, one by one, what they understand by the *real being* of any particular Thing, they answer with a wonderful enriching of human knowledge as to the properties of things. Each of these sciences has volumes which discourse at length respecting its peculiar aspect of the general inquiry. But all of them together, with all the volumes their devoted scholars have ever written, cannot tell the entire story as to "what" any single thing really is. Not one of them, however, in the least alters — either by increasing or diminishing, by removing or modifying — the conviction and the aspect of cognitive experience answering to the so-called "substantiality" of things. And why should the students of the physical and natural sciences be either expected or qualified to accomplish this difficult task of metaphysical criticism? They are precisely as naïve and uncritical towards this conception as are the most ordinary of minds. These sciences will increase our knowledge as to what things really exist, and as to what others are the products of superstition and of fancy; as to what is the constitution of the things which do exist, and what they can do, and how the relations between them change, and what careers we may expect them to run in their joint course as parts of an all-embracing Cosmos. But they are compelled to assume or posit a "that-which," a reality comprising manifold "points of attachment," to which all these properties, transactions, and relations may be ascribed.

Nor do the merely logical explanations of this same ontological conception, as ordinarily given, carry us much farther into the heart of its meaning. Logic does, to be sure, enable us to see on what occasions, and even under what conditions, men correctly make use of this category. But in doing this friendly office its students are peculiarly liable to mislead us by a specious analysis which resolves the "real being," or "substance," of things into some other and "purer" thought-form. Sometimes — as will appear more clearly when we consider the metaphysical conceptions of matter and of mind — logical analysis tries to slip over, or cover up, the real problem by introducing some very unpretentious but most potent and deceptive phrase, — as, for example, the one employed so frequently by the positive sciences, namely, "that-which." Matter is "that-which," etc.; or mind is "that-which," etc. But our question concerns precisely this, — the meaning and outcome of this convenient phrase, "that-which."

Sometimes, however, this category of substance is resolved in terms of number, relation, and time; and then one is told that the substance of any thing is a sort of enduring unity established among the more obvious regular transactions of the thing. Sometimes, again, one is taken nearer the heart of the truth and is told that by this conception men express their confidence in an "external cause of their sensations." Here space, cause, and relation, are so combined as to stand together in the room of the category of substance. Now this category has not three feet, but one foot. And it is itself in origin more simple and obvious than the category of cause. To resolve substantiality into mere force is an even nearer hit at the fundamental truths of our experience with the real.

We are assured by Wundt [1], as a matter of logical analysis, that an object-thing is given to our thinking when a complex of properties and conditions is found coexisting with a certain

[1] Logik, p. 410.

constancy. And elsewhere[1] we are told by the same writer that "extra-mental" reality is given to such an object-thing on the basis of an assumption which may be expressed as follows: "All perceptions which stand in connection according to their time-space form must also be connected together in respect of their content." Hence arises the demand so to think the actuality that the contradiction which Herbart and others have found in the very conception of substance shall be done away. In our effort to meet this demand the mind receives help from the conception of a Law regulating the Change which things undergo, and thus bringing about in them, for thought, the unity which they certainly appear to have to the senses. Further reflection upon this conception of substance ordinarily results in two false views: (1) that substance is the ground of experience, but is not given in experience; and (2) that substance, as being, is opposed to appearance or phenomena.[2] In both these views, Wundt sees a contradiction; for the former regards the category as merely hypothetical, and the latter regards the same category as the only actual, of which the phenomenal in our experience is merely a manifestation.

In thus clearing the ground for the recognition of the true genesis and nature of this conception of substantiality we find ourselves in agreement with the positions of Wundt. The two views which he regards as false cannot possibly be accepted as true, without a total abandonment of the most fundamental position which we have elsewhere taken regarding the nature and validity of cognitive experience, and regarding the nature and application to realities of all the categories. With the determination not to be deceived into setting up internal contradictions between abstractions and mistaking them for contradictions inherent either in our own cognitive processes or in the nature of things, we also sym-

[1] System der Philosophie, p. 170.
[2] *Ibid.*, p. 267 f.

pathize most heartily. But it is just at the point where the more purely logical treatment of this category is abandoned for its more critical and metaphysical treatment, that we find ourselves forced into positions of antagonism. For Wundt becomes uncertain and obscure in his analysis when he attempts to deal with the "psychological application of the concept of substance." Whereas it is in the application of this category to the Self — not, however, as separate from external objects, but as in a living commerce with them — that we discover the genesis and realize the meaning of the same category as applied to things. Moreover, instead of finding the conception of "substantiality" as held by the physical sciences superior in clearness to that of psychology, the exact opposite seems to us true. Still further, the opposition which Wundt sets up between the scientific and the religious conception of substance seems to us another of those contradictions between mere abstractions which a genuine spirit of philosophy seeks so diligently to avoid.

But returning to the earlier point of view, we are impressed anew with the inability of logic to solve our problem. For it seems that logic can only enumerate certain conditions under which the category of substance is implied in all acts of knowledge, and then go on to add certain other categories with which it is most closely allied in the same activity of knowing. Doubtless, "*constancy*" in certain specified properties and conditions of every object is necessary in order that the mind may either perceive, or conceive of, any particular object as a real being, — as having the substantial existence of a Thing. Doubtless, men ordinarily assume that what is connected in their experience with a *sufficient* constancy is also somehow similarly connected in the particular reality. And undoubtedly the conception of a law regulating change helps the mind in its effort to think its way into the clear light of a full-orbed conception of all that is necessary to the actuality of any particular thing. But unless these words

are to be taken as empty and ineffective abstractions, comforting to the thought of the thinker "of the chair," but quite inadequate to do the business of the actual world of real things, *we must find something more in them than they at first suggest.* Connection, as such, is bare fact; it is inert circumstance — whether in thought or among things. What is the "that-which" that connects? Tying together, when done, is done; and from the point of view of the external observer, this is the end of the matter. What is it that ties together both the different "moments" of the cognitive act, and the different qualities and conditions or states of the thing known? And how can the mind make "law regulating change" account for the real being of anything, unless it appeals, under cover of these words, to a force that shall somehow constitute the actual unity of the particular being, by dominating, as it were, over the stream of the phenomena and holding them constantly directed upon some resultant end?

John Stuart Mill,[1] after rejecting the definition of the "school-logicians" ("A substance . . . is self-existent; in speaking about it, we need not put *of* after its name"), proposes to define the same conception on the basis of the ordinary twofold distinction of substances into bodies and minds. He then proceeds to characterize the former as "the unknown external cause" to which we refer our sensations; and the latter he describes as "the sentient *subject* (in the scholastic sense of the term) of all feelings; that which has or feels them." But now that has happened with this writer on logic which happens with him and with all his followers in every similar case; a delightful simplicity of language in clearing up logically the mystery of existence has only led us from twilight shadows into the darkest night.

The significance of Mill's language is, however, most instructive. Let us consider it; we are to have here a perfectly "sun-clear" definition, from the logician's point of view,

[1] A System of Logic, 8th edition, Book I., chap. iii., § 6 f.

of the conception of substance as applied both to things and to minds. But mind is defined as a substance, because it is a *subject*, in the scholastic or metaphysical sense of that term; it is, indeed, a veritable "that-which;" and "being sentient" is set down as the mind's characteristic self-known qualification. Now so far as the substantiality of things is concerned, this is the very phrase which the physicists to whom Mill defers are ready to adopt; with them every material thing is, however unknowable as to its essence otherwise, a veritable "that-which,"—a *subject* of states, in the scholastic sense of the term. And in physics it is because of their substantiality that bodies are known as a cause of our sensations; but this cause is external (that is to say, "not-ourselves"), and unknown, since "being sentient," as minds are, seems not to define it well. Now how "being a cause" differs from being a "that-which has," etc., we are left in most pitiable condition of doubt. Apparently these two phrases amount to the same thing; for the former gives us the conception of substance as body, and the latter the conception of substance as mind. Neither is it at once apparent why being a *subject* of states that are defined by the word "sentient" should essentially differ from being a *subject* of states that cannot be defined as sentient; — at least so far as "being a subject" at all is concerned. But what if one goes on to insist upon having a logical conception of what it is "to be a subject," or "to be a cause" (known or unknown), or "to be a 'that-which,'" at all? In answer to this metaphysical inquiry, the acute and "sun-clear" definition of the logicians appears to have nothing to say. But this is the very question that metaphysics wishes to have answered.

It is interesting to notice how Mr. Bradley, in his first positive and constructive attempt to state what is necessary to reality,[1] fixes upon "self-consistency" as its most essential characteristic. Such consistency, however, he thinks, cannot

[1] Appearance and Reality, Book II., chap. xiii.

belong to "independent realities." It must belong only to that Unity of Reality which philosophy seeks to find. This self-consistency as a single system is self-existent. But it must therefore remain unknown by any other than its self; for "if it is known by another, then forthwith it cannot be self-existent since this relation must clearly belong to its essence." Here again we have the attempt so often repeated in the history of philosophy to form a logical conception of Reality resulting in the substitution of an unknowable One Being for that concrete fulness of life and meaning which the actual system of realities seems to possess for the cognitive consciousness, for the practical life, and for the religious faith, of the multitudes of men. But what interests us at this point is the recurrence in all these conceptions of a single word. That word is the significant word *Self*. How shall this word be understood? When the school-logicians defined substance as the "self-existent," did they mean to imply the doctrine that every object-thing is real only when it is known, or thought of, as existent after the analogy of the Self? To be self-existent = to exist as does a self, — at least, in this respect, that some point of attachment for the changing relations and states is assumed to remain constant amid all change. And does Mr. Bradley's "self-consistency" as the core of reality mean anything less than such consistency as a self may have, and actually does have? But if this is its meaning, how can it be said that the essence of reality must remain unknowable by us?

From our perplexing search after a satisfactory statement as to the significance of this category we return with some few valuable results. Language, science, logical analysis, all alike, imply the confident recognition of something in experience, and something in reality, which answers to such abstractions as Substance, Being, or *Ding-an-sich*. Moreover, we have been constantly pressed back, by the disappointing results of our search, toward the re-examination of the actual

facts of cognitive experience. In this experience we seek the genesis and the interpretation of our category. Whence comes, and what is the meaning of, this *X*, which lies at the heart of every particular thing?

So far as the answer to this present inquiry lies in the patent facts of human experience it may be given very briefly in this place; for this is an inquiry which has occupied us with sufficient detail in several other connections.[1] In brief, the genesis of the conception which has gone under the name of "substance," "pure being," *Ding-an-sich*, is to be found in every primary fact of knowledge. Every such fact is, on its subjective side, a "*self-felt* activity" of the knower, a doing that is not mere fact of conscious change but is also a consciousness of doing. Fused with an indefinite variety of sensation-factors, it is the consciousness that I am alive; reflected upon and made the basis of generalization, it is the knowledge that I am not pure passivity or unlimited impressibility, but I am a *Will*. This self-activity, however, would never be "self-felt" in such a manner as to reveal in consciousness the very core of my being, were it not itself checked and inhibited. The experience of being checked and inhibited on every hand is the very core of my cognition of every other Thing. My self-felt activity is opposed by "that which" is not, and cannot be recognized by me, as *my doing*. The inhibition is, on the contrary, necessarily recognized as the doing of that which is not me. To that which, not being my self, stands opposed to my self-felt activity, I attribute the same essential being which I know myself to have. *It*, too, is a centre of activity which stands to my self-felt activity in the reciprocal relation of acting and being acted upon. *It is in this fundamental fact of an activity, which is both self-felt and also known*

[1] As a question both for descriptive psychology and for the theory of knowledge to discuss, see the following works of the author: "Psychology, Descriptive and Explanatory," chaps. xi., xiv., xxi., and xxvi.; "Philosophy of Mind," chaps. iii. and iv.; and "Philosophy of Knowledge," chaps. v.–vii. and xiii.

to be inhibited, that we discover the root, in experience, from which the conception of substance springs forth.

But this peculiar phase, or aspect, of every cognitive experience is never the whole of any particular act or process of knowledge. Mere self-felt activity would never amount to a knowledge of Self; mere recognition of the inhibiting of this activity, together with the attribution of an analogous activity to some external object, would never amount to the knowledge of a Thing. For on the side of knowledge no example of such a complex mental process is ever "mere," or "bare:" and on the side of reality, as we have repeatedly seen, no particular thing is ever known as mere or bare being. On the subjective side, indeed, it is the self-activity involved in all knowing which accounts for my positing "that" *I* am; and it is the activity recognized as centering in the object which limits and inhibits my self-activity, that accounts for my positing "that" *It* is. This is because every cognitive judgment is a deed of will; and its issue is the affirmation of some reality whose very essence is recognized as will. In a word: "*Knowledge is born of thinking which has arrived at the pausing place of a judgment — a finished product of synthetic activity.*"[1] For neither will alone, nor intellect alone, nor feeling alone — if it were not an antiquated and even absurd manner of speaking, to apply the word "alone" to the working of any of these so-called faculties — could ever result in a genuine act of cognitive judgment. As there is no will "alone," and no feeling "alone," in any knowing process; so there is no pure being, or thing-in-itself, existent in the world of concrete realities. On the other hand, as there is no intellect which can alone achieve the result of making a cognitive judgment, so there are no qualities which, without "being posited," can combine into the complex existence of an actual Thing. Particular beings are not known to the mind as *mere* bundles of qualities; for its act of knowledge is not mere

[1] Quoted from "Philosophy of Knowledge," p. 146.

intellection. But they are not known to the mind as unrelated or *pure* beings; for the mind cannot will or feel them to be at all without discriminating their qualities and relations. *This synthetic voluntary activity of every cognitive (that is, essentially trans-subjective) judgment is the genesis of the category of substance.*

Having once recognized that fact of knowledge, or rather that aspect of every fact of knowledge, in which the conception of substance has its genesis, nothing further can be said about it for its more complete definition. Strictly speaking, all the categories are essentially indefinable. They are themselves those fundamental forms of cognition which by their different particular combinations and modifications make all definition possible. The rather should we say that they are themselves, as men think them, the abstractions derived from the cognitions of many particular minds and things which exist in an indefinite variety of concrete relations and conditions. This indefinable character belongs especially to the category of substance — if we may continue the use for a while longer of so obnoxious a word. The reason for its especially vague and shifty use, and its peculiarly provoking resistance to all attempts at analysis, is now apparent. This conception is not given to the mind in the form of any particular content of consciousness. Its genesis is the recognition of the fact that all knowledge involves self-felt activity, inhibited by a non-self into which we project, by a necessary and natural analogy, a centre of forth-putting and resisting activity.

In discussing further the validity of the category of substance we may now make a certain convenient substitution. For this *X*, in which the common people, the men of science, and the adepts in the logical analysis of fundamental conceptions, all alike believe, we may substitute *self-activity.* By this phrase is meant such activity as is an immediate datum of every act of perception or of self-consciousness, so far as

the life of the Self is concerned; and which is, of necessity, in the very act of knowledge also attributed to every external object regarded as real. This question now follows: What is there in the known constitution of the mind, and what in the known constitution of things, which warrants the application of this conception to the reality of either, or of both?

That the category of substance, as thus described by an appeal to what is universal in human cognitive experience, is applicable to the reality of the mind, there can be no doubt. Indeed, to answer such a question negatively would be to affirm and to deny at the same time. The consciousness of the plain man, of the psychologist, and of the metaphysician, agrees in testimony upon this point. Those critics of Descartes who facetiously affirmed that it was just as valid an argument to say, "I walk, therefore I am," as to say "I think, therefore I am," were unquestionably in the right if "walking" be regarded as a genuine cognitive experience with one's Self. When I am, whatever the specific content of consciousness may be, so much alive as that I *know* I am alive, then my knowledge admits of no doubt as to the reality of its object. Actually, no individual experience with the Self is ever given, except as determined content-wise. But every manner of content must be experienced as the particular way in which, for the present moment, my self-existence is actually determined. And this self-existence, however determined in particular, must always be known and thought of, as self-determined, although in dependence upon the influence of other beings. All the language in which men speak of themselves, whether ignorant and savage or intelligent and cultivated, and whether they speak from the practical, the scientific, or the philosophical point of view, illustrates this fundamental truth. Language about human self-conscious life, and about the concrete realities of human daily living, is intelligible in no other way. The answer of every man to the question, What do you think? or, How do you feel? or, What

are you planning? must always take the form of "positing" the self-activity (though related to and conditioned upon some object) of the "I am."

No form of reflective thinking upon the nature of mind ever succeeds in escaping virtually the same conclusion. Physics and psychology, or workaday experience, can explain why I think, or feel, or will, this rather than something else. And such explanation, either popular or scientific, seems somewhat to relieve from mystery our questioning after the "what," in particular, of human experience. But the incomprehensible "core" of every individual's being is not to be reached by solving such problems as *why* I see this and not that; or why I hear a sound having the pitch c^1 instead of c^2. *That* I see, hear, taste, and smell, — that I have any cognitive experience at all — this is the unexplained mystery, the irresolvable datum of my being. And when the metaphysical analyst is invited to approach this problem, he can, of necessity, do nothing with it beyond pointing to the same ultimate datum, and perhaps making his appeal to self-consciousness in somewhat clearer terms.

Every man, in every cognitive experience, when he makes himself, as the knower, the object of reflection, recognizes this "doing" — self-felt and yet inhibited and determined by an object — as the point at which all analysis must stop, and in which all experience has its roots. The disputes of psychologists and metaphysicians over this point are mere logomachies, which by their very character demonstrate the same primary and indubitable fact. Striving to express it in both its subjective and its objective aspects, we may speak of it, from the psychological standpoint, as at once active consciousness and consciousness of activity. Adding a touch of metaphysics to the psychology we may understand the talk about "positing," etc., in which German philosophy has abounded. It is this central "moment" in our stream of consciousness which Teichmüller, for example, explains as a "positing conscious-

ness" (*das setzende Bewusstseyn*), whose other side is a "consciousness of positing" (*das Bewusstseyn der Setzung*). Generalizing, and so forming one of those fascinating and yet dangerous abstractions in which metaphysics abounds, we recognize with Schopenhauer and Hartmann, fact of will, bare will, as the solid core of being, — the essential and the actual of existence, inseparably united. Interpreting Kant's doctrine of *Ding-an-sich*, both positively and negatively, we get many indications of a recognition of the same truth in it. Both the intense vitality and also the meagreness of Fichte's philosophy come from his greatly emphasizing this experience of the soul with itself.

In a word, that form of man's experience, in which are found the roots that, when developed by abstract thinking, bear the product of this most evanescent and intangible of the categories ("Substance," "Pure Being," "*Ding-an-sich*"), is an actualization of the same category in its application to the Self. The conception of "being-real" could never orginate without the experience of a conscious self-activity inhibited and brought to an arrest by other activity. In this experience, however, we immediately and indubitably know the Self, the knower, as a "being-real." Behind, beneath, above, around, this fact of experience, reflective thinking cannot get. It defies further analysis, and it needs none.

If now the valid application of the same category to the reality of things be questioned, one can arrive at a satisfactory answer only by use of the principle of analogy. The difference which we wish to signify by the word "analogy" is dependent upon the difference between the genesis and development of the knowledge of things and the genesis and development of the knowledge of self. It is instructive to notice how that clear but not profound thinker, John Stuart Mill, emphasized this difference in his twofold definition of "substance." The *substance* of the mind is said to consist in its being a "subject" of states, in "the scholastic sense of

the term." It is a veritable but sentient "that-which." But the *substance* of things consists in their being an "unknown external cause" to which the mind refers its own sensations. It will be shown in due time that the conception answering to the words "being a cause" has no meaning that does not involve the same experience with ourselves and with things, in which the category of substance arises. It is now to be noticed, however, that, according to Mill, this "external" (or non-self) cause is unknown by the mind; but the mind knows itself as actually the subject of its own states. A certain superior immediateness and trustworthiness of knowledge as to the substantial reality of the mind seems to be admitted in all this. And the admission is warranted by the facts of experience.

It remains now to show how all human knowledge as to the reality of external things pivots itself upon that central act of "positing" which attributes to each object of knowledge a self-activity, inhibited and determined, however, by the self-activity of other objects. When we say "*self*-activity," we mean activity that is analogous to that which we feel ourselves to have, as the very core and centre of our own being at all. This "attribution" — or "reference," to use the term of John Stuart Mill — is not an inference or a logical affair, in its more primitive forms of realization. It is itself an activity, which enters into the very life of every cognitive judgment, in such a way as that, without it no form of logical inference could possibly take place. This much is true in the claim of Helmholtz and others that a certain kind of inference enters into every completed act of perception by the senses. The psychology of the whole subject need not occupy us anew in this connection; it is enough to notice that the attribution of such a "core" of being belongs in an essential way to the cognition of every particular thing.

How the physical sciences deal with this primitive view of all things as both doing and having something done to them,

after the analogy of the experience of the Self with the objects of its perception, will be shown in detail in the proper connections. The current somewhat shifty conceptions of Force, Energy, Causation, etc., as applied to things on the one hand, and of Inertia, Mass, etc., as applied to the same things on the other hand, all involve the use of this category. Action and reaction, impenetrability and elasticity, etc., involve the same conception. At the basis of all the modern refinements of the physical sciences lies this same notable and impressive experience. In all man's workaday as well as his scientific commerce with physical objects, they are known as centres of an activity that resists and of an impressibility that receives, the activity of other objects, including the self of the knower. The "substantiality," the "being real," of every particular Thing, consists in just this. Our knowing it as substantial and real necessarily involves the creation of this vital analogue.

In order to illustrate the fidelity to all human experience of the propositions just made, it is necessary at present simply to consider how men establish for themselves, or for others, the actuality of any particular Thing. In all the simpler, non-contested cases, he who is not blind has only to look and see. If, however, he will not even look, he cannot see; and that particular visible thing cannot become known as a reality to him. But merely looking involves the *minimum* of self-activity, in its inhibition and subsequent, although nearly instantaneous, determination by the object which seems to give to the mind the cognition of an actual thing. The object is, "content-wise," a group of visual symbols into which, because of the excitement and arrest of attention, I infuse the trans-subjective being which every reality must have. So interested am I, as a rule, in reaching the practical results of my cognitive activity that the essential nature and significance of the activity is not recognized at all. But now let any doubt arise: Is that object which I see a really existent Thing? To settle this doubt, I *will* to look, and to look more atten-

tively; or I *will* to look again and again. Or, still further, I will to put myself into other relations toward the object (as of nearer distance or clearer light), in order that it may more decisively determine my conscious state. Suppose, however, that after using all the resources of perception by sight, the doubt as to the reality of my visual object still remains. Then I *will* to bring my other senses into relations of action and reaction with the same object. I strive to grasp it with my hands, or to embrace it in my arms, or to push against it with all my bodily force. When this intensifying of the consciousness of doing something is accompanied — in some manner *pari passu* — by an increase in the consciousness of being resisted by that which I cannot identify as an object with myself, then I "know" that this particular object is a "*real* Thing." It has stood the last test of substantiality which immediate and primary cognitive experience can apply to it. It has met my self-felt activity in a way to compel me to recognize it as a centre of resisting activity, after the analogy of a true and actual Self.

If, now, this kind of sensuous evidence fails or gives a contradictory voice at any step along the line of progress in settling, by an appeal to perceptive experience, one's doubts as to the real being of the object-thing, one may resort to *mere* argument. Then the judgment which affirms or denies reality for the object is made to depend on yet more remote and doubtful grounds. By almost imperceptible degrees this judgment may be made to fade away into the misty regions of mere opinion or conjecture. The Thing thus loses the "core" of its reality, because the mind can no longer get its answer into the form of a modification of active consciousness by an inhibitory or determining activity which centres in that particular external object. On "general grounds" of intellect one may argue one's way to the derived knowledge of, or belief in, the real being of many things which never become objects of perceptive experience. For us who see, there are

many things known as actual to sight, that are not actual to touch; for the blind man none of his tactual and muscular realities are things conceivable as real to sight. For in his case, things of other men's sight can neither do anything to him, nor receive any impressions by activities that make themselves felt, as his own, within his consciousness.

If now the question be raised, What further is it for any particular Thing *just* to be? — that is, to validate its claim to actual existence, irrespective of any definite form of existence — no answer can possibly be given. The instant any being ceases to be experienced as in this commerce of active and passive relations, within the system of beings, it forfeits its entire appreciable claim to actuality. Nor can we imagine or think of it as a concrete reality, unless we mentally posit this "core" of its being after the analogy of our own "self-existence." Moreover, every bit of evidence which comes to senses, to imagination, or to intellect, as to "what" any particular thing actually is, aggregates itself about this central position. Speaking in a figure of speech which, however, goes straight to the heart of all human experience with physical realities: *knowing things involves a positing of them as centres of the forthputting and the reception of activity.* It is not simply this; for knowing is not *bare*, indeterminate activity; neither are things *mere* centres of activity. As has already been shown, every concrete reality is an actual harmony of all the categories.

With no other need of systematic metaphysics have its students striven more earnestly and yet unsuccessfully than with the need of satisfactory principles of differentiation. Schopenhauer found these principles in the categories of Space, Time, and Causation; but he was never able to show with the least degree of satisfaction, how these three principles may be either derived from, or reconciled with the unity of a bare and blind Will. It is much too early in our discussion to consider how we propose to secure the satisfac-

tion of this need. But without recognition of its existence the metaphysician cannot even refer, however vaguely, to *particular* real beings. Whatever the human mind may know, or conjecture, about the Unity of Reality, about the One, the Absolute, the World-Ground, — or any other term philosophers have chosen for this unitary conception, — man's first-hand, verifiable, and common knowledge is the knowledge of particular existences. For every human mind knowledge is, and remains, knowledge *of* the self and *of* other concrete beings, — their qualities, relations, and transactions. From this knowledge of particulars all theory of reality must set out; to this knowledge all theory must be ready to return, for its correction and its testing, again and yet again. Reality may be some sort of a Unity; and there may be One Absolute World-Ground. But there are no known *things* in general, and no known *minds* in general.

Now — as will appear throughout the next succeeding chapters — all the categories afford both differentiating and unifying conceptions. But the conception derived from that "moment" of every cognitive experience which we have already coupled with the category of substance, requires a brief treatment in this place. We will call it "Quality."

The ground may be cleared for such brief criticism of this conception of Quality as will be necessary to our purpose, by a series of negative propositions. These denials all follow from the attempt to treat the conception as entitled to a place among the categories. And, first, the qualities which distinguish particular beings from one another are never in fact separable from those beings. Qualities that are not "of" things do not really exist; but neither do qualities "off" things, — as it were. Language adopts all manner of qualifying terms as though they were themselves realities in need of qualification. For example: "Green is one of the three fundamental colors, having a central position in the chromatic scale, so many vibrations in a second, and

such intensity, degree of purity, etc." The full significance of this way of expressing experience can only appear in the light of a further analysis of the categories involved; these are relation, number, time, magnitude, force, etc. Scanty reflection, however, is needed to make obvious the truth, that the quality of greenness, or of being green, is not actually separable from the particular beings which it qualifies. Subjectively regarded, this quality is really my sensation, or yours, or that of some other sentient being. Objectively regarded, from the popular point of view, it belongs to the object thing, — to the grass, or the glass, or the cloth, I see; and objectively regarded, from the scientific point of view, it has been provided with a "subject," to hold and possess it, — viz., the wonderful and mysterious being of the ether.

Neither — to deny again the value of certain metaphysical abstractions — can any single quality be regarded as sufficing to give the separateness of *a* reality to any object. In the metaphysical theory of Herbart, the different categories were regarded as mutually exclusive; and the solution of the problem of being must be found in regarding all concrete realities as consisting of innumerable simple essences, each with its own single characteristic quality. But we have seen that the reality of every particular being depends upon its somehow harmonizing the categories; and we, in fact, do not know and never can know any thing as having only one quality. The rather should we say that the qualities of every particular being seem to be indefinitely numerous; and that the more we know of ourselves and of things, the more does the list of known qualifications become enlarged. All our improved means, both physical and chemical, for observing the qualities of atoms and of masses of matter, whether inorganic or alive, demonstrate the truth that the individual existences of the world are not differentiated by the possession of single qualities peculiar to each. And yet the conception of a Unity of all things has been confirmed thereby.

Neither, again, can the qualities of particular beings be considered as statical conditions or rigid states of existence; and so inconsistent with change or growth in these same things. It is easy enough, indeed, to discover that the very reality of some things depends upon their growth. An actual tree, or chick, or man cannot be, without coming to be; the actuality of such beings depends upon growth. But a profounder reflection shows this to be really true of all particular beings. Their qualities are, indeed, "of" them, and may not be taken "off" them; but they are not like the irremovable husk, or shell, of their being, of which the kernel or "core" is the substance. Rigid substance + unchanging qualities, is not = a real "Thing."

And, finally, we cannot express to ourselves what is meant by the qualities which distinguish any particular being, without making use of forms of experience from which other qualifying conceptions are derived. Qualities of any one being always imply relations between two or more beings. The very notion of qualities implies a reference to causal influences, and causal relations so called. And through the doors opened by these categories we are led out into the broad universe of being, under the all-embracing sky, by every attempt to consider how any single real being can possibly be distinguished as such. This leading forth of human reflection from the particular Thing — no matter what it may be — to the universal Cosmos, of which it is "part," rests upon a scientific basis that is growing broader and more solid every day. And if the infinite wealth and mystery of particular things is being emphasized by science, with its increased specialization, the avenues to knowledge of that mysterious Infinite in which all particular beings have their Being are made more numerous.

"Raise thou the stone and find me there;
Cleave thou the wood and there am I."

Suppose, however, that a clear and positive answer be demanded to the inquiry: What is it really to be the *quality* of any particular being? We *sort* things out by their qualities — either for practical or for scientific purposes, and it is by knowing the more permanent or persistently recurrent qualities that we learn what to expect from other beings and what we may hope to do with them. In a word, by their qualities we know "what" things are. But this only tells us what use we make of our knowledge of the qualities of particular beings; it does not tell us what qualities really are.

In seeking for suggestions of the correct and final answer to the metaphysical inquiry just raised, we are justified in going straight to our most immediate and indubitable knowledge. I know, to some extent, what some of my own qualities really are, — at least, if I will not refine overmuch, or try to get down below or around behind the evidence. My qualities, as immediately and indubitably known to me, are the modes of the behavior of my Self — both as doing and as suffering in my changing relations to other beings. By self-knowledge I am "qualified," or "particularized," in an indefinite variety of minutely different ways. The varying modes of my doing and suffering, of my complex active and passive experience, in their peculiar combinations and grouping, serve to distinguish me from all other beings. Others may "*sort*" *me out* by knowing sufficiently well what these modes of behavior are; they are the important items in the conceptual knowledge of my Self. I "*sort*" *myself out* in the same way. And the actuality corresponding to all this cannot be doubted; because description here is, so far forth, only the expression of what is realized in my cognitive experience with myself.

But what meaning must be attached to such a phrase as "being the quality of an external thing"; and, What is it in reality to be the quality of any such thing? The first answer which one is tempted to give to these inquiries turns back for

an appeal to the same cognitive self-consciousness. But this, of course, can only tell us what are the qualities of that particular thing, *as related to me.* For example, the book which lies upon the table, is greenish in color, is so large, is heavy, roughish in look and feel, etc. But here physics and psychology, from their different established points of standing may join hands and proclaim that such descriptions of the qualities of things are not ontological at all. The qualities of things, regarded as "appearances" in our stream of consciousness, are by no means copies of the qualities which really belong to the things themselves. And this is as true of the so-called primary qualities of things as of those qualities which have, of old, been recognized as secondary and derived. Thus the physico-chemical sciences have found it necessary to devise an entire system of non-sensible qualities which *actually* belong to things; and which thus constitute the conditions or causes of the same things appearing to us as endowed with their immediately known qualities. That is to say, the physico-chemical reality of things is made, in part, the explanation, of the psychical reality of things. What things *are* determines how things shall *seem* to us.

Now the fact just mentioned offers a very instructive, but somewhat unsatisfactory answer, to our inquiry as to the nature, in reality, of the category of Quality. So far as things are concerned, this category seems now to have a twofold significance. For the popular consciousness, and indeed for every man's consciousness so long as he takes the popular point of view, the immediately known qualities of things are not their real qualities. Science tells us, however, what these real qualities are. And the real qualities are totally unlike the immediately known qualities; but the former stand to the latter in the relation of cause to effect.

The mind is loath to have its metaphysical inquiry as to the actual nature of the qualities of things end in this disappointing way. It continues to ask how we are to think of

the *real* qualities, which science reveals to the eye of imagination, as related to the things whose qualities they are. And no other answer to this inquiry seems possible than the one which follows the necessary analogy of our experience with ourselves. Things *really have* qualities; although the conjectures of modern science as to what these qualities really are may be as far from a correct copy as are the visual and tactual representations of the man who has never listened to the marvellous descriptions of modern science. These qualities are really nothing other than the actual modes of the doing and suffering of the things themselves. But this is to conceive of things anthropomorphically. Granted; it is indeed to conceive of them — or rather to know them — *at least so far forth*, after the analogy of the self-known Self.

Any particular being, then, — whether thing or mind, — in order to claim a place in reality, must have its own group of qualities; but these qualities are, really, only its characteristic ways of acting and reacting in varying relations to other particular beings. And these qualities are kept together, in our thought and in reality, by some kind of a bond. It was this latter conception which was discussed in the earlier part of this chapter.

To know *that* any particular thing really is, it is not enough merely to observe, to discriminate, to think, — so long as such forms of experience are regarded as merely passive content of consciousness. To posit the existence of things as a matter of knowledge, it is necessary to experience a felt inhibition of one's self-activity. But to know *what* any particular thing is, one must observe, discriminate, think, the various modifications of one's conscious content; and one must attribute these to the thing as its qualities.

When I ask, What, in reality, are the qualities of that particular Thing, considered not as appearances to me but as actually belonging to the thing? only one answer can be given. They are the forms of the experience and of the

doing of that thing. If I regard them as forms of the "experience" of the thing, I take the point of view in which I am myself conscious rather of being first acted upon, and then of reacting. If I regard them as forms of "doing," I take the point of view from which I am conscious of acting and then of observing changes in other beings which I interpret as results of my acting. Both points of view get their meaning from knowledge of the Self and from experience with its many forms of doing and suffering in the commerce of life with Things.

Other distinctions in qualities — such as those between the primary and the secondary, the essential and the accidental, the permanent and the transitory — need not concern us just now. These distinctions are all species under the one genus whose nature our metaphysical analysis and criticism has attempted to disclose. As regards the central problem, What is it actually to be the quality of any particular being? these distinctions in kinds of qualities are not important. We shall find them important subsequently, when we raise the question concerning the limit of such qualities as must be grouped, or placed in succession in order to maintain the reality of any mind or thing. Meantime, the discussions of this chapter may be summed up, in a partial and preliminary way, as warranting the following conclusion: To be a real Being, with actual qualities, is to be what I know my Self to be, — namely, capable of initiating and of experiencing changes that are attributable to some subject or "central point of attachment," conceived of after the analogy of a conscious Will.

But such a conclusion as the foregoing is itself not the end, but rather the beginning, of yet more careful metaphysical analysis and criticism. It leads us at once to discuss the forms of knowledge, recognized as forms of reality, that furnish topics for the next chapter.

CHAPTER VI

CHANGE AND BECOMING

THE conclusions of modern science have sufficiently avenged any dishonor done in past centuries to the reputation of Heraclitus, that first great apostle of the all-inclusive reality of Change. "There is nothing abiding, either in the world or in its constitution taken as a whole. Not only individual things, but also the Universe as a whole, are involved in perpetual, ceaseless revolution; *all flows*, and nothing abides. We cannot say of things that they are; they become only, and pass away in the ever changing play of the movement of the universe. That, then, which abides and deserves the name of deity, is not a thing, and not substance or matter, but motion, the cosmic process, *Becoming* itself."[1] Yet, with Heraclitus, this ceaseless self-transmutation was conceived of as though taking place in an "eternally living fire:" "All is exchanged for fire, and fire for all, as wares for gold, and gold for wares." And over this "dim idea of a World-substance" was placed in control a hidden formative harmony, a divine directing law (δίκη), wisdom considered as an efficient force (γνώμη), an imperial and universal reason (λόγος).

Thus the thinker who first installed the category of change upon the throne of reality, was forced to acknowledge, although in vague and niggardly fashion, the full truth to be: *mere* change cannot constitute any single actual thing, much

[1] Quoted from Windelband, "A History of Philosophy," Part I., chap. i., § 4.

less an orderly world of interacting actualities. Change must somehow be constituted a *Principle* of Becoming, in order to be recognized as a conception valid for reality. And what was true for this ancient philosopher, with all the mistaking of figures of speech for substance of things which characterized his age, is true *a fortiori* for us now; if we wish to "get at" Reality, to know what Being is, we must accept change as one, but only one, of the categories. Becoming is actualized in the particular, because the universal Principle of Becoming belongs to the very nature of Reality.

That change is actual, both in minds and in things, cannot be denied in consistency with the undoubted facts of all human experience. But this is quite too mild a way of calling attention to the very nature of this experience and to the nature of the things in commerce with which such experience comes. Indeed, there is so little mystery or doubt about this, that much discussion of this category seems superfluous. The ontological aspect of the problem may be expressed in the following question: How can change in reality be so conceived of as that it will serve as an actual all-inclusive principle of becoming?

That particular changes actually occur is a fact of knowledge so primal and indubitable that the attempt to deny it involves the mind in the most fundamental contradictions. We cannot even imagine or think of changeless existence, whether mental or physical. A mind that experiences no changes is not conceivable as a mind at all, and a totally changeless thing is no actual thing. It has just been shown that particular beings are made particular by the possession of certain groups of qualities peculiar to them. But qualities are modes of the doing and suffering of these beings; and to do or to suffer in different ways implies, of course, the reality of change. But what should now be insisted upon as necessary to establish a point of view from which to criticize this category is, that the full meaning of change can be

understood only by recognizing that it is a primary and indubitable fact of knowledge. Any grasp of consciousness which is a full-orbed act of cognition — content-full and self-active and involving all the so-called faculties — is itself, in its full significance, an actualization, a living experience of the category of change.

Psychology, assuming for the moment the biologist's point of view, recognizes the immense significance of sensations of change for the origins and growth of all human mental life. In the form of sensations of motions, the human animal, like all its brothers in the scale below, depends largely upon its sensitiveness to change for its survival in the struggle for existence. Psycho-physics illustrates abundantly the principle that "sensations of becoming" form, in a peculiar way, the stimuli of discriminating consciousness, and the indispensable basis of all clear perception of things. But such experience as this does not afford an indubitable knowledge of change in reality, whether such change be referred to processes in some thing "out there" or to the form of mental representation "in the mind." Discrimination as a truly intellectual activity, and memory in the form of clear recognition of likenesses and unlikenesses, are further necessary in order to establish, within our more primitive and indubitable experience, the category of change. Yet again, the mere occurrence of like or unlike states in the stream of consciousness, and the mental discrimination of the likeness or unlikeness of these states, does not suffice for the valid cognition of an actual change. Development of time-consciousness, of self-consciousness, and of thing-consciousness, is necessary to the recognition of the fleeting succession of different conscious states, as "*of*" the world of selves and of things. For changes are no more capable of an "unattached" existence, of being known mid-air (*auf der Luft*), as it were, than are qualities or states. *Minds* change and *things* change; and we know the actuality of their change.

But knowledge of minds and of things is never mere sensation, or mere discriminating consciousness. Even less is it a mere succession of totally unrelated conscious states, — even if these conscious states are themselves acts or processes of relating mentally.

Now, no act of knowledge that has for its object particular beings, whether things or minds, in a process of "undergoing" or "initiating" changes, can be less rich in content than is knowledge in general. In other words, change in reality cannot be, originally, merely sensed or merely inferred, but it must be *known;* its metaphysical import, or ontological character, has its roots in cognition, where all the roots of our metaphysics lie. All knowledge has, as knowledge, this metaphysical import; and it all involves the development of time-consciousness, of self-consciousness, and of "thing"-consciousness.

If now the data of cognitive experience be analyzed, there is found amongst them all the fact of a knowledge of actual changes, taking place both in ourselves and in other things. This known fact of change in particulars is much more primitive than is any recognition of a unity of nature, a principle of uniformity, or any conception of a "reign of law" over any particular being or over that system of beings which constitutes the world as known to man. The diversity of one's own experiences, the heterogeneity of other things, the contrasts and oppositions of objects, are the primary and orginally more important "moments" of all man's knowledge. This is the one undeniable fact in actuality which lies bedded in all human experience: *In the form of time-consciousness I know my Self and Things as differentiating their being by passing from one condition of doing or suffering into another and, in some respects, unlike condition.*

That we have correctly stated the fact of knowledge as it appears from the subjective point of view, no one can doubt. Hence it is customary for psychologists, when struggling

to free their expressions from all metaphysical implicates, to point out that the very nature of the "stream of consciousness" is that it shall somehow "*flow*." This stream *is* — say some — a *mere* succession of states; although even then it is necessary to add, that each "phase," or "wave," or "pulse," of consciousness may carry with it something that gives to it, and to the preceding phases, waves, or pulses, a sort of unity of existence. But, however one tries to express such a principle of unity, — and certainly, something of the kind is needed to bind together the successive conscious states into a "stream," — there can be no doubt, and there is no dispute, from the subjective or psychological point of view, that without changes of conscious states there can come to be no "stream of consciousness." "*Stream*" means a flow, a series of changes. That every mind *appears* to itself as changing, and that indeed its content is a succession of different "appearances," no question can be raised.

But the truth that, from the psychological or subjective point of view, all facts of cognition are facts of changing content, has also its objective or ontological side. Considered from this side, this truth becomes an unfailing guaranty of the reality of change, both in minds and in things. That I appear to myself to change, when this appearance is a fact of knowledge, is not distinguishable from the fact that I know myself really to change. Or — to state the case more precisely — the distinction between appearing to one's self to change and actually changing one's self is only a distinction in points of view and in form of abstract mental representation; it is not a distinction valid in reality. When I pass from a state of predominating pain to one of predominating pleasure, or from the perception of a running horse to reflection upon the psychophysical mechanism which is necessary to its running, or from the memory of a disagreeable experience in the past to the joyful intuition of a great painting, I know that I do actually change. *Hence cognitive consciousness of change is*

convertible with cognition of actual change when the Self is regarded as the object. For the entire complex experience is statable only in this way: I know that I have changed; I was actually in one condition some while since, and I am now actually in a different condition. The distinctive feature of such a form of consciousness, if it attains the dignity and the veraciousness of a genuine act of self-knowledge, is just this: I am cognitively conscious of changing, and this "changing" is known to be mine.

In all our use of this category, too, its application to things is somewhat differently made from its application to ourselves. Hence the metaphysical discussion of change must begin by returning to the more modest claim: external things do certainly *appear* to me, and to all men, very frequently and somewhat indefinitely to change. I cannot, however, immediately convert this claim into an indubitable proposition that things do, in reality, change; — at least not if by "Things" I now refer to aught conceived of as trans-subjectively existent. Such a conversion of claims is made more difficult by the conclusions of modern science as to the nature of physical changes in general. For example, the table yonder, with the books lying upon it, has certainly the appearance of a tolerably stable collection of separate beings, occupying for the present unchanging relations in space. Nor do the visual qualities of these beings change in so obvious a way that from the practical point of view there is any need to take account of their changes. To be sure, as clouds pass over the sun the colors of the objects are slightly altered; and if one chooses to notice this phenomenon, one discovers that the relations, apparent size, etc., of the objects alter, as one's eyes and body are moved in their relation to them. But the important fact of cognitive perception is this, — books are lying still on a stationary table, a mental picture of a system of unchanging beings in statical relations of space. If now the physico-chemical sciences are consulted as to what actually causes in

consciousness such a picture, these sciences have a tale to narrate of ceaseless, incredibly rapid, and most mysterious changes. The table and the books, considered as trans-subjectively real and regarded from the scientific points of view, are molecules that actually approach and retreat from each other; within these molecules are atoms darting back and forth; perhaps these atoms must be conceived of as themselves infinitely varied systems of change, like wreaths of smoke or of gas; and within each reality, and between all the elements of them all, and between them all and me, and within my eyes, nerve-tracts, and brain, vibrates unceasingly the awfully mysterious being of the omnipresent and god-like ether.

No wonder that the man of so-called "common-sense" recoils with some incredulity from that picture of the changes in things which the modern sciences constantly affirm to be the actual state of the case, as well as to afford the real causes of the changing appearances of things to him and to other men.

In order to understand our experience we must return to the sure ground of standing in the facts of knowledge. From them our path for the exploration of the category of change — its trans-subjective applicability and validity — must be traced anew. These facts, so far as they concern the true being of the world, are primarily perceptions by the senses. And if for the moment one is willing to set aside the very doubtful distinction sometimes made between things as known to us and "things-in-themselves," some progress may quickly be made toward a tenable solution of the problem before us. For it has already been shown (p. 46 f.) that to regard the former as *mere* appearances and the latter as the *only* true realities is to deny the most fundamental implications of all human cognitive experience.

In the knowledge of things by human perception they are all known to be subjects of certain modifications peculiar to them, each one. In other words, the mind perceives changes

in things as well as in its self; but the character and limitations of the application of the conception of change are not precisely identical for both things and minds. Some of the apparent changes in things are necessarily attributed to changes in the mental points of view; or even to actual changes going on in the mind. Some other changes, however, we are irresistibly convinced, — so long, at least, as the point of view of perceptive cognition is steadfastly maintained, — belong to the things themselves and occur in reality. Such are especially all alterations of the appearances of things in space. There are, indeed, illusions of motion not a few; and a man does not need to be a modern expert in psychology to know this. Men have always known and reckoned upon such experiences successfully in a practical way. But whatever space may really be, and whatever motion in space may actually mean, there can be no doubt that a knowledge of actual changes of place by the things constitutes an inseparable part of men's knowledge of what things really are and actually do.

To naïve perception things actually change not only their size and shape, by accretion or growth or separation, but also their color, taste, and other sensuous properties. All the advances of the physico-chemical sciences, however, tend in the direction of reducing all changes in the sensuous properties of things to terms similar to those to which changes in place, size, and shape may obviously be reduced; all perceived changes of the qualities of things, that is to say, are really appearances due to actual motions of things. These motions may be either in the gross masses of things, or in the molecules and atoms composing them; or they may be motions in some medium, or vehicle, which connects human organs of sense with external things, such as olfactory effluvia, luminiferous ether, etc. It must be admitted that all the resources of these sciences, aided by the two arms of mathematics and improved instrumentation, have not yet succeeded

in making the reduction complete. Certain occult or manifest qualities and changes in things have to be recognized in fact, for which we can as yet devise no formulas — even imaginary — in terms of motion. Nevertheless, the effort, the tendency, and the triumphs, of modern physical theory are unmistakable here. Things can move — either as masses in space, or intra-molecularly, or perhaps "intra-atomically;" but these are all the changes of which, *quoad* "things," they are capable. This kind of change, however, they actually do both undergo themselves and cause in one another; and, indeed, they are always ceaselessly changing in this way, whether the dull and slow senses of man can discern the truth of fact or not.

What is necessary to acknowledge, then, as known to science, may be stated in the following way: The doubt or denial of all actual changes in external things cannot be held in consistency with the facts and legitimate inferences of man's experience with things. *Agnosticism, whether positive or negative, concerning the trans-subjective validity of the category of change undermines the entire fabric of human knowledge.* It is not simply a permissible postulate to hold that change in my perceptive consciousness is explicable because change is actual in the world of things. It is rather the necessary presupposition, the inescapable metaphysical import, of all perceptive and scientific knowledge of things, that they actually do change. To state the fact of knowledge in an abstract but thoroughly justifiable way: The very terms of the knowableness of things include the implicate — things do really change. Process and Becoming in the realities of human experience cannot be reduced to merely subjective affairs, or to characteristics of the existence of the Ego as a flowing "stream of consciousness," without undermining the entire structure of that knowledge of the external world which the race has builded through many thousands of years. If this were the place for such an *excursus*, it could also be shown that all the social, and even the ethical and religious, postulates, convic-

tions, and most firmly established cognitions of men, are alike pledged to guarantee the actuality of changes going on in external things.

The growth of human knowledge shows that both selves and things are somehow and to some extent at least, connected together in a unitary system of interdependent changes. That the changes which go on in any one thing, or group or system of things, are never entirely independent of changes going on elsewhere, is true both as a sort of necessary presupposition and as an indisputable conclusion of scientific investigation. Only in case something like this be conceived of as actual, can the name of science be vindicated for any body of propositions. Only as man's growing knowledge confirms and perpetually illustrates this conception, can scientific development take place. Here the omnipresent category of relation thrusts itself forcibly upon our attention. Things and minds do not change in a wholly isolated way. And even when some one thing or mind seems to take upon itself the responsibility, so to speak, of *initiating* any change in itself, such change *eventuates* in a change in some other thing or mind.

Without at present raising again the issue between a monistic or a dualistic, theory of mind and body, and the theory of psycho-physical parallelism, we need only call attention to the universally accepted facts involved in experience: *somehow* changes in us and changes in things *are* actually related. In certain forms of experience the conviction is universally accepted, and must therefore be critically accounted for, that the actual changes recognized in the self and those changes perceived or inferred in external things run through such an order as that the one is in a fairly faithful correlation with the other. For example: "I saw the greyhound run from the hedge beside the road to the tree upon the hillside." This "I saw," with its object, was actually a series of conscious states of perception that have

somehow come to have the unity of a continuous mental process. But the "running greyhound" is a real thing changing its actual position in space. And yet the very meaning of the terms in which the complex knowledge is declared implies, as beyond doubt, some sort of dependence of the former on the latter. While the perceptions changed, P, P_1, P_2, P_3, P_4, etc., the place of the greyhound changed, as G, G_1, G_2, G_3, G_4, etc. In details I may easily be mistaken; the apparent position indicated by P_1 never corresponds with the actual position of G_1: and yet the entire mental series of P, P_1, etc., is a "fairly faithful" representation of the trans-subjective series, G, G_1, etc.

Further discussion of much that is involved in what has just been said must be left for other connections. It is enough now to notice that in knowing the actuality of changes in both things and minds, both kinds of change are known as somehow belonging to a single system of changes. *To remove things from this system would render them unknowable and even inconceivable as things; to remove our self from this system would be to render this self incapable of the knowledge of things.*

When such a word as "system" is introduced into a metaphysical discussion, the thought has already passed beyond the conception of *mere* change, or change considered as unlimited — change that is conceived of only in terms of change. And the truth is that mere change, or random change, in ourselves or in things, is not what our true experience reports to us; such change, did it exist, would be essentially unknowable. To speak of a "Thing" changing, or of a "Self" changing, is already to limit the character of the change. For the point of contemplation to which the mind is now compelled to advance for the further reflective treatment of this category discloses the following truth: nothing real, whether minds or things, can be, unless some limitation is put upon the changes which it undergoes. Both knower and object-thing known at once lose claim to be the same realities if they are carried

by the "world-flow" beyond a certain limit of change. Some principle of becoming must, then, be acknowledged as in control of all the modifications which all real particular beings actually undergo. In other words, change is indeed a necessary qualification of reality, and an indubitable fact bound up in the process of knowledge; but mere change is not only logically inconsistent with the conception of a thing or of a mind; it is also inconsistent with the reality of any known thing or self-conscious mind. Here, again, then, we take our stand on the incontestable facts of cognitive experience and, in defiance of all manner of sophistic or other agnostic abstractions, affirm that this regulation, or control, of change must be ontological. Metaphysics, whether naïve and so fitted for practical life and for the pursuit of the physical sciences, or critical and systematic, is compelled to recognize *principles* of becoming as applied to the world of concrete realities.

In the conclusion just reached we have spoken of "principles" of becoming rather than of any one Principle of Becoming. This has been partly due to the wish to cling as closely as possible to the actual facts of men's common life of knowledge; and partly to the belief that all the other metaphysical problems are involved, in a vital way, in any effort to unify the different actual changes of things and minds. It must be admitted therefore, for the present, that the growth of knowledge allows of, and seems at first-hand analysis to require, an almost indefinite variety of real principles of becoming. From the practical points of view, and for man's workaday uses the amount of changes consistent with the continued reality of any single thing is determined in a vague and shifting manner; but what chiefly determines is the particular point of view, with its practical utility. For example, water frozen is no longer water, but has been changed into ice; and yet it is after all the same clear water which makes the good ice. Water heated changes into vapor: and heated more, it is no longer water but has become steam. This same water, when

subjected to certain conditions in the chemical laboratory, changes into oxygen and hydrogen gases — things so unlike their original that the change seems incredible to naïve perception. Oxygen and hydrogen gases are not the same things as the water from which they are derived, the water is no longer really existent; but these particular volumes of gas have just come actually to be. Liquefied air is not at all like air; and yet it is called air — only liquefied. But that the water has *changed into* gases seems improperly to express the transaction in reality. The air has changed its form and become liquid. The water has lost its reality by the process of decomposition; but two other things have been brought into being by the same process. Even the man of science, with his mind so firmly fortified against all claims for an existence *ab initio*, can scarcely avoid talking in this vague and uncertain way.

It is not necessary to illustrate the truth for which we are contending with any of the thousands of examples which might readily be found. Consider the amazing transformations through which some animals and plants go; so that recognition of them as in any sense the same beings in the different stages of their transformations, is difficult or impossible even for the most trained among experts. Consider the amazing transformations through which every plant and every animal necessarily goes — transformations that are not considered "amazing" only because they are too familiar to shock the unreflecting mind. For example, we are now being told, as an interesting new discovery in botany, that "the cycle of vegetation of the truffle is completed by an alteration of states, each having to do with a different substratum or host. This alteration is very similar to that which takes place in the case of Ascidiums which, as it is known, develop on a different species of plant from that which bears them during the earliest period of their existence." And what shall we say of the changes which go on in the newly impregnated egg, as modern microscopy and physiological chemistry describe these

changes? Here is a Thing that is, and is to be, in some sort the same throughout; but *what* it will be, does not appear as yet, even under the highest powers of the magnifying glass or the most delicate of chemical tests. But as we look on, and under our eyes, it proceeds to define itself more and more by going through most astonishing and wholly unpredictable changes. Under the influence of interior forces it proceeds to maintain its claim to be a particular real being by placing all its changes under the limitation or control of some peculiar principles of becoming.

If now our science tries to account for any such succession of phenomena by ascribing it all to the peculiar attributes of the molecules which compose for example the substance of the living cell, it only pushes the problem further back. For, in the first place, it can only describe the molecules and atoms themselves as real things, whose changes are somehow limited and controlled by principles belonging to each, — molecules of albuminoids, carbohydrates, etc., or atoms of carbon, oxygen, hydrogen and nitrogen. And, in the second place, the principles of becoming, which account for observed changes in the relations of the atoms, or in the constitution of the molecules, do not in themselves suffice to serve as principles of that becoming which the entire history of the plant or animal displays. Every atom is some sort of a unity equipped by chemical theory with its peculiar list of principles that regulate what it can really do and be; and so is every species of molecule compounded of the atoms; and so is every individual real thing composed of an infinity of molecules.

It is undoubtedly things which grow that furnish most striking illustrations of the need of *principles* of becoming. But the same need exists for things which do not grow; for all things, indeed, that change; and so for all things, since all things change. When something to serve as a nucleus is cast into the menstruum where certain molecules of a

definite chemical construction are in solution, then a crystal whose character is determined by the construction of the molecules begins to form itself. In fact, the molecules rally, run together and range themselves in appropriate ideal manner; and a wholly new being is formed. This striking series of changes is separated from those that characterize the growth of a living cell by certain sharp lines of demarkation which modern science only emphasizes, but cannot as yet see the possibility of breaking down. Yet the crystal, like the full-grown animal or plant, is far from being the resultant of unlimited or uncontrolled changes. On the contrary, it acquires and maintains its existence as a "crystal" — as that *particular* being which it is — under a stricter limitation and control than that which presides over the living cell. Its more specific characteristics, as a crystal of a particular kind, require it constantly to subject its changes to the appropriate principles regulative of its specific form of being.

In a word, however the points of view and the ends desired may change, the metaphysical truth enforced by the facts remains the same. Men choose the points of view from which to contemplate the alterations and the identities of particular things, with various theoretical or practical ends to serve. *But changes of things in reality cannot be known or conceived of, as mere mechanism of change; they are always known and conceived of as falling under some principle that shall serve as a living and associating unity.* Principles of becoming must limit and control all actual becoming. Only thus can things have their different states and conditions unified enough to validate their claim to a place in the world of reality.

What kind of principles accordingly will serve to confine the changes of things within the limitations necessary to their being known as realities? And, since every such principle must be ontological: What kind of a "living and associating unity" must particular real beings possess in order that,

while actually changing, they may somehow continue real? Now, all human language and human thinking show clearly enough how these questions must be answered, if answered at all. And the refusal to accept this answer throws the mind back into that agnostic position from which the consistent application of any of the categories to reality becomes impossible. "*The real identity (or continued being) of any particular being consists in this, that its self-activity manifests itself, in all its different relations to other beings as conforming to an immanent idea.*"[1] But the conception of "conforming to an immanent idea" is derived from our familiar experience with ourselves. It is as actually thus conforming to immanent ideas that we know ourselves to exist, and to remain somehow the same, in spite of all changes of states and conditions which we either undertake or undergo. And when we know, or conceive of, other selves as actually continuing in existence, although being subject to change, the same principle is applied to them. Finally, all men's cognitions and conceptions of external things illustrate the same truth. Things are known or conceived of as remaining somehow *self*-identical, while being subjects of more or less important changes, after the analogy of this identity which belongs to the self. We project into things "that which" secures their existence from succumbing to the constant process of change. Like the self, they remain constant, in their doing and suffering, to immanent ideas. As having self-activity — the mysterious "core" of the being of things — and as being related to other beings in a system of things, the various forms of their doing and suffering come under the control of ideal principles. And to be actually "under the control of ideal principles," as distinguished from being a mere, unintelligible and unmeaning mechanism of change, is to do and to suffer, in this respect as we know ourselves to

[1] Compare "Philosophy of Mind," chaps. iv. and v.; and "Philosophy of Knowledge," chaps. vii. and ix.

do and to suffer. The ontological Principle of all Becoming must be an ideal principle; and as an ideal principle, it requires so far forth that things should be known as bearing an essential likeness to the Self.

Now, that I do actually conform to immanent ideas is an indisputable truth of immediate experience. This is, in many instances, the central truth of self-consciousness; in all instances of self-cognition it is a truth implicate in the very process of self-cognition. Knowledge of one's self, as actually changing or as having changed, always implies the recognition that the actual changes have been limited and controlled by some ideal principle. If experience be analyzed, it is found that, although self-knowledge cannot be resolved into what Lotze calls "self-feeling" and somewhat injudiciously overestimates in his doctrine of being, it cannot be experienced without such self-feeling. Neither can self-knowledge exist without that self-felt activity which has been found to be important as a sort of root for the growth of the metaphysical conception of substance, or pure being. But neither can the act of self-knowledge be completed without recognitive memory and that reflective thinking which issues in the cognitive judgment: *I*, that *was*, and *am*, and *have been*, am the *subject* of all the changes. This is to affirm that all the changes have been conformable to the one idea of *my* "Self;" and therefore not merely felt, and willed, but also known as mine. This conformity is not merely conceptual, a bare agreement with an abstract idea; for the Self which realizes and knows it is not a mere abstract being, a bare idea of a self.

Suppose, now, that any particular change occurs in the "stream of consciousness" which, on well-known psychological principles, must be attributed to the Self and not to some Thing, but which only partially or with difficulty conforms to the ideal principles recognized as belonging to the self. Such a change is recognized as more or less "unlike" me, al-

though it is "in" me; it seems "queer" that I should do in this way or should suffer such feelings as this. Still, within certain not easily assignable limits, one may swerve in one's conscious changes from the idea which defines one's own being and yet remain an actually existing and self-identical mind. Even the unfortunate victim of progressive paralysis can still remember some things belonging to his past, can still recognize some of the present objects of his mental representation as belonging to his peculiar "personal" experience, can still exhibit to himself and to others certain well-known traits. He is still in a measure the same real mind that he once was; and yet, how changed! But suppose that absolutely all conformity recognizable by himself or by other minds to the *idea* of the former self has ceased; then this particular mind has so changed as, for the time at least, to have vanished from reality; *it* is no longer the subject of changes, for *it* has ceased to be as becomes the actuality of a mind.[1]

Doubtless, we seem to be talking in figures of speech when we apply similar terms to physical things. Granted, too, that we are really talking in figures of speech. The fact remains, nevertheless, that all which we know, or can mean, about the identity of things amidst their changes must be constructed after the analogy of our experience with our own changing and yet self-identical selves. How physics and chemistry work out the details of the general principle, and how they summon to their efficient help the categories of Force, Quantity, Number, etc., will be briefly considered elsewhere. Confining ourselves at present to the discussion in hand, we can only repeat what was formerly said from another point of view: "Things have in reality no sameness, no identical and permanent being, except as they conform to the terms of mental existence, and manifest the immanency and control of that

[1] For further discussion of this problem, see the author's "Philosophy of Mind," chap. v.: "The Consciousness of Identity and so-called Double Consciousness."

which is inconceivable unless it be stated in terms of mind. In vain do physics, chemistry, and biology strive to escape some such conclusion as this. The terms they employ to set forth what in the physical world, amid all changes, remains really the same, are absolutely meaningless unless all material reality is admitted to be the expression and the subject of what is ideal."

Mr. Bradley is not without good grounds in affirming that a certain "self-consistency" is the primal principle of all the real. For if now we attempt to apply the conception of change or becoming to the entire world of being, the same line of reflective thinking must be followed to its legitimate end. A World, a Cosmos, no matter how incomplete or even inchoate, and no matter how little rational from the higher ethical and æsthetical points of view, cannot be an unrelated and unsystematized series, or network, of changes. Some principle of becoming must be recognized, just so far in space and in time as such changes are known or even conceived of, as belonging to *one* world. And wherever known or conceived of, this principle bears the stamp of its origin and of its original application. Its extension to the system of physical change in the world of things is valid only if the analogy between this world as a totality and the totality of changes we know as belonging to the Self is valid. *For the application is itself the projection of the immanent presence of an Ideal Principle into the heterogeneity of physical changes, as a living and associating force.*

It was the poetical recognition of this truth which led Shelley to write: —

> "The One remains, the many change and pass;
> Heaven's light forever shines; earth's shadows fly;
> Life, like a dome of many-colored glass,
> Stains the white radiance of Eternity."

But Browning's expression of the thought is more profound, although at the same time his figure of speech is more confused.

"For as some imperial chord subsists,
Steadily underlies the accidental mists
Of music springing thence, that run their mazy race
Around, and sink, absorbed, back to the triad base;
So, out of that one word, each variant rose and fell,
And left the same 'All 's change, but permanence as well.'"

But in order to discuss the possibility of applying the category of Change to the World-Ground, or to the entire system of things and to its career of changes considered as falling under some conception of development, there is much work of a more fundamental and humble character yet to do. Should we finally attempt such high themes, however, it will be well to remember the very limited set of conclusions which this chapter has enabled us to reach.

CHAPTER VII

RELATION

It is a significant saying whose origin has been attributed to different authors, and which expresses a truth that may well enough have occurred in an original way to different minds: "Relation is the mother of all the categories." From the subjective point of view relations are what we find as ultimate *residua*, so to speak, of all our thinking; and from the objective point of view, they are the manifold expressions which cognitive experience gives to the fundamental and ultimate fact, that all concrete realities — so far as known or knowable to man — are united into some kind of a system. If that which unites things is solely the thinking faculty of man, then all relations whatever are subjective. But if the bond actually exist, in various ways, between concrete real beings, such relations cannot be the result solely of the synthetic activity of the human thinking faculty.

It is the temptation of all metaphysical discussion of this category to settle its problem quickly, and to attain a comfortable position of logical consistency, by leaping to either one of two extreme points of view. Suppose it to be concluded that all relations are merely subjective; then it is possible to see how an independent active and synthetic force like the human mind should create a sort of unity out of various appearances to itself, in accordance with the terms set into its own constitution. Trans-subjective or actual relations between real things are thus abolished; and the only reality that remains as the "correlate" of this psychic conscious

force is the One unrelated mystical Absolute. But such "correlation" is itself surely a relation that must be maintained as existing in reality. It is in fact an entire system of concrete and definite relations. And thus the category of relation produces destructive contradictions within the very Being of the Absolute. On the other hand, if we deny that any of our subjective relations belong to the world of true reality, the successive cognitions of man remain mere "appearances," or mists, hung mid-air over a machine-like system of physical interactions; and no possible way can be devised of verifying any *truth* as arising between the subject and real things. *For "truth" as obtainable by the mind of man requires a complicated system of actual relations between a thinking subject and the transactions going on amongst beings other than this subject.* The reality of relations is, therefore, a metaphysical problem whose solution determines one's entire attitude toward the nature of reality. And this solution cannot be safely reached by a leap to either extreme position.

We follow a suggestive method of approaching the problem offered by the category of relation, if we consider how great is the variety of forms which this category may assume. In the popular way of regarding the truth, there is only *one* Space, *one* Time, and *one* essentially identical conception of Force, — however manifold the "manifestations" of this force may be. Of Qualities, Changes and Numbers, of Forms and Laws, a quite indefinite variety appears necessary in order to account for the facts of our more primary experiences with things. Of Relations, however, there certainly seem to be a considerable number of species which do not admit of easy reduction under a single all-inclusive genus. And yet the number of possible relations is by no means so essentially unlimited as is the number of qualities or changes which things are capable of developing. Considered as a principle of unifying, therefore, this category must be given a place somewhere midway between the two classes of categories with

which it has just been compared. Or, to put the case in another way: The correspondence of all spaces, times, and forces, to the conceptions of one space, one time, and one force, unifies the different concrete experiences which men have with an indefinite variety of things and of minds; and thus they all become known as belonging to the one World which includes them all as particular beings in It. But the indefinitely varied qualities, changes, and numbers, of things serve to break this unity up again into an indefinite variety of particulars; although quality, change, and number, are also unifying principles. Here, however, the mediating influence of relations becomes manifest. Space, time, and force actually unify, because particular beings are known as *related* in space, in time, and under the various forms or manifestations of force. On the other hand, the particular beings of the world are bound together under higher and yet higher forms of unity as they are shown to be *related*, in respect of their qualities, changes, and forms, and their subjection to general formulas called "laws."

That some such view of the mediating and unifying office of the thought of relation is not fanciful, will appear more clearly when it is considered how actual relations are established by the growth of human knowledge; and also what it is to be related in reality. But the nature of this category may perhaps be shown in yet more impressive way by calling attention to the part it plays in those dramatic schemes for a rigid classification which result from the vain attempt to treat metaphysics as a matter of formal logic. For example, the author of one such attempt[1] having got himself ready "to complete the Formal edifice which we have been slowly building up," divides all the categories into "*à posteriori* elements of Receptivity" and "*à priori* Dialectic moments of Percipience." The former are then subdivided into "Attuits" and

[1] See a book called "Metaphysica Nova et Vetusta, A Return to Dualism, by Scotus Novanticus," Sixth Part, The Categories.

"Predicaments"; and the latter into "Pure" and "Derivative." But the interesting thing for our present purpose to notice is, that four of the eleven "attuits" are different kinds of relation (*i.e.*, of space, time, quantity, quality); and all the other seven are inexpressible without introducing the conception of relation. Again, all the so-called "predicaments" repeat the same classification from an altered point of view; while each of the "*à priori* Dialectic moments of Percipience" — except the "Absoluto-Infinite" and "Being" as Identity — is most obviously neither conceivable nor workable without aid from the conception of relation. And as to the two exceptions, we might easily undertake to show that they, too, need the same aid if they are not to remain barren, useless, and *merely* formal abstractions.

But a greater master than the author of the "Metaphysica Nova et Vetusta" has failed to appreciate the full significance of the ontological truth which is admitted when Relation is declared to be "the mother of all the categories." We refer, of course, to Kant, the founder of modern metaphysical dialectic and criticism. Who has emphasized more than did he, the truth that all scientific cognition depends upon the forms of the functioning of the intellect, or *relating faculty*, in its different kinds of judgments? In fact, the conclusions of the Transcendental Æsthetic as to Space and Time, as well as the theory of the Transcendental Dialectic or "logic of illusion" (*eine Logik des Scheins*), depend upon the trustworthiness of man's relating faculty in its dealing with the data of objective cognition, or "phenomenal reality." Yet Kant's definite recognition of the part which the category of relation takes in the unifying of human knowledge is wholly confined to the discussion of the third of the four classes of categories. And here his scheme leads him to recognize only three kinds of relation, —namely, Inherence and Subsistence, Causality and Dependence, and Community or reciprocity between the active and the passive.

It is undoubtedly impossible to give any definition of the category of relation in general. It might be said *a fortiori*, we cannot tell what it is to be related, or even what we mean when we affirm relation of things in general, without assuming the very conception it is proposed to define. Definition itself is a relating; — either by bringing the particular into a partial unity with the universal, or by bringing one event into a partial unity with another event as its cause, or by bringing one part of a thing into a partial unity with other parts, as forming a totality, etc. This very attempt to define, however, since it results in presenting a more vivid picture of the way in which different kinds of relation are concretely realized furnishes no unimportant clue to a fuller appreciation of the significance of this category. *For every relation appears to us, and must be described, as a partial unification of two beings which, when considered irrespective of this particular relation, would be incapable of being known together — the same standpoint being maintained.*

The metaphysical meaning and ontological value of what has just been somewhat obscurely indicated will appear clear when we have considered briefly the psychological genesis of the conception of relation. What is it "*to relate*," — or for the knowing mind so to function as to present itself with a picture of things, or events, under the general conception of relation? Now, however difficult it may prove for different thinkers to agree as to the answer to the ontological problem, or even as to whether any answer to such a problem can be given, there is no doubt about the correct answer to the psychological question. To relate, from the subjective point of view, is to think; it is to function as our intellect always does whenever we observe the simplest and most obvious relations; or whenever by elaborate processes of inference we reach those relations that are most complex and hidden. Such intellection is necessary for the *knowledge* of relations.

Whenever the attempt is made to regard experience wholly

from the psychologist's point of view, it is seen that there can be no knowledge without that functioning of intellect which is, pre-eminently and essentially the faculty of relating. "Relation-feelings" — more properly called "feelings of change" — must indeed be admitted, if one is intent upon a complete analysis of the content of consciousness implied in the knowledge that A is related to B, whether as part to whole, cause to effect, means to end, in space, in time, or however related. The ideas, whether memory-images or images of more purely imaginative origin, which arise in connection with this "feeling" experience, are undoubtedly important factors in determining the way in which the relating function shall be accomplished within the stream of consciousness. Neither can we fail also to observe that relating is an active process; that judgments of relation are true deeds of will. But the distinctive thing about all "relating" is the manifestation of mind as intellect. It is intellect as a relating faculty which makes possible the *knowledge* of relations, of whatever kind. Only when discriminating consciousness has developed the power of framing cognitive judgments can relations be said, not merely to be implicit in the stream of consciousness, in the form of "relation-feelings," but to be known as actually existing between the objects of cognitive experience.

It is, then, the nature of the cognitive judgment, regarded as the summing up of a process of relating, in which must be found the explanation of the genesis of the category of relation. *Its* universality as a form of knowledge, when regarded from the subjective point of view, is necessary and complete. For all knowledge necessarily takes, as knowledge, the form of this judgment. It is the nature of this judgment, too, which explains what was formerly said in describing the work performed by the category of relation in the progressive organization of experience. The work is itself a partial unification of two otherwise wholly disparate and unknowable objects. We say "otherwise unknowable," — *the same stand-*

point being maintained. For two objects which refuse to be even partially unified, or judged as belonging together, under terms of any one particular kind of relation, may always be unified under some other relation by changing the point of view from which judgment is pronounced. No object, however, can be known, can become an object of perception or of inference, that cannot be partially unified with other objects by some kind of judgment of relation. The thing A *must* be classed with the thing B, however different in qualities, size, shape, etc., as co-existent in the one space in which all things exist. If A is known as co-temporaneous with, or antecedent, or sequent to B, then the one time in which all things come into being, persist, and pass away, serves as a further principle of unification. "Time-wise," A is at one with B; — although A may occupy more or less, in quantity, than B, of this one time. A may, or may not, be classed with B under any one of those particular forms of relation which serve for the partial unification of the particular beings of the world. But in order to be known at all both must be judged as falling, together with other beings, under a unity brought about by certain forms of relation.

It is, then, by being related that the different objects and "momenta" of man's experience as a "knower" are temporarily and partially unified; and are afterward, so to speak, released from these particular uniting bonds, only to enter into others of similar character. The only complete and final release, from all relations, for any object comes when it disappears entirely from the sphere of knowable reality.

The same psychological view of the origin of the category of relation explains how the knowledge of any particular thing, or class of things, accumulates and develops in the history of the individual and of the race. From selected but changing points of view the different "momenta" or aspects of the thing, or the different members of the class, are thought together under the varying kinds of relation. In the

development of the individual's perception, as dependent on time, on the distribution of attention, and on the external conditions limiting the quality, intensity, and "life-likeness" of the sense-elements, one may pass from a vague knowledge of "somewhat" over there (though one has no idea "what") to a knowledge involving more and more of apperception and of judgment as to the particular "what." This is the mental construction of the Thing as a concrete unity exemplifying various forms of relation, — both internal and toward other things.

The same view shows us why things are known as having so many, and no more, principal kinds of relations. There are as many principal kinds of relations as there are points of view from which the mind may regard things as objects of relating activity; and there are only so many. Thus the other categories in some sort set the limits within which the operations of the relating intellect are conducted. Things may be related in space, or in time, or as respects the kind and amount of force belonging to, or operating upon them; they may be related as respects quantity, and number, and forms, and laws; they may sustain various forms of the causal relation, such as we express by "production," "making," "effecting," "influencing," "stimulating," etc.; they may be related, by virtue of likenesses and unlikenesses, in species, genera, families, and so on. Sensations, ideas, thoughts, and trains of reasoning, as such, may be related. The categories may themselves be considered as related; some of them — as, for example, substance and attribute — in ways peculiar to themselves. Thus, in his *System der Philosophie* Wundt has a chapter on the "Relation of Transcendent Ideas to Metaphysical Views of the World:" and in this chapter he considers the two ideas of an "infinite totality" and a "finite absolute unity" as related so that they "completely correspond" to the relation between the mathematical conceptions of the infinitely great and the infinitely small.

All that has been said thus far only means that whatever men think, or think about, must bear the form of thought. And since all knowledge is dependent upon thought, all that is known is known as related. So that, if on the one hand we maintain that relations exist for our thought, only as our relating activity constitutes the relations, on the other hand we must also maintain that relations are the forms which our thinking impresses upon all that has existence for thought.

But now the important distinction emerges between subjective relations and relations that are trans-subjective; or — as one seems compelled to express the distinction in popular language — relations that are merely thought and relations that exist in reality. The student of systematic metaphysics cannot deny or abrogate the validity of some such distinction. It has already been seen that a system of subjective relations as compact as is the nature of man's functions of knowing and yet as all-inclusive as is the sphere of those functions, must be admitted. Suppose now it be denied that relations, in any way correlated to these, exist trans-subjectively. Suppose it to be affirmed that the *only* knowable relations which can be called actual are those consummated in the stream of consciousness between the different "momenta" of that stream. Relations, in reality, are thus limited to our own sensations, feelings, ideas, thoughts, etc. Strictly carried out, such a view results in compelling every thinker to regard himself as the only real being, — real, because unrelated to any other real being. The conception of reality is thus made identical with the idea of the Self regarded as absolutely independent and separated from all other actual minds and things. But such a conception makes void the psychology of knowledge, vitiates objective science, and destroys the foundations of the ethical and social order in man's consciousness as a knower; it, indeed, ends in just that suicidal hypothesis of solipsism which has already been rejected.

If, on the contrary, the actual existence of other selves,

with whom I may come into intellectual, ethical, and social relations, is once admitted, — on whatever basis the admission is placed; then actually existent relations between real beings are also admitted. And if the distinction between truth and error be held valid in the commerce between these intellects, then the distinction between subjective relations and actual relations becomes a matter of fact. That is to say, it has become matter of fact that the intellect of A either does, or does not, relate B and C to itself, or to each other, as A, B, and C, are actually related. And if the number of selves constituting this community of real beings, and the complexity of the actual relations existing amongst them, exceeds the powers of the intellect of either A, B or C; then also the subjective and the actual relations appertaining to this community do not correspond throughout.

Nor can the claims of this distinction be arrested at the present point. For if knowers were, by their relating activities to create all actual relations, and things were not themselves actually related; then these knowers would belong entirely to a world apart from the world of things. Of course, one cannot be ignorant of the answer which the Kantian subjective view of the nature of knowledge proposes to our problem. According to this view relations between things and minds, and relations amongst things, are all alike the work of the intellect's relating activity, which functions in a totally miraculous way after the fashion of the twelve categories. "Nature," and the laws of nature, are to be regarded as purely the construct of the mind of man. But, as has often been pointed out, Kant himself was obliged to assume, in an uncritical way, the positive conception of a trans-subjective reality for things which should serve the threefold purpose of being the unknown cause of our sense-experience, the ground of the limitations that control our scientific cognitions, and the goal of the higher activities of reason in its effort to reach its supreme unities. But all this is inexpressible and inconceivable with-

out implying terms of relation. Thus again the whole system of accounting for man's experience as a knower breaks utterly down in its effort to lift off from reality the load of the category of relation.

Internal and destructive contradictions will be found in every attempt that ever has been made or can be made, to ground the cognitive experience of man in a real being which has neither internal relations, nor relations to his own mind. Words cannot be invented which are sufficiently charming or convincing to banish these contradictions from the conclusions of such an attempt. This is invariably true of the Reality envisaged, believed in, or excogitated, by every form of mysticism. Such mystical metaphysics has its entire content in contradictions. It constructs the One, from which all variety and manifoldness must come without any internal principle of differentiation; the Will that must create or evolve a world of infinite concrete complexity, without any guidance from thought, or stimulus of *motif*, or end suggestive of an idea; the "self-consistent" Being, which maintains its consistency without any bond between the different momenta of its own being, and somehow contrives to make a good show of itself to human consciousness without having itself any consciousness of what It is about. Its God is the Absolute; and It must somehow be kept freed from all responsibility for the actual relations that the experience of man recognizes, and yet must be thought of, felt about, and behaved toward, as though *It* were the Ground of all these relations. In a word, it calls on us to recognize the Great Unrelated, which is, nevertheless, the Source of all relations.

Within the bounds of human knowledge, then, no limits can be set to the category of relation. Whatever man knows as real is known as actually related. Whatever he conceives of as real is conceived of as related. The absolutely unrelated is both unknown and inconceivable. Reality as a whole, must be known, if known at all, as a System of

relations. The distinction between subjective relations and objective relations, or relations merely existing in thought and relations existing between real beings must be admitted. But this is a very different distinction from that between being related and being unrelated. The one is a distinction between the partial and the perfect, or between error and truth, or between ignorance and knowledge. The other is a distinction between the known and the knowable, on the one hand, and the unknown and unknowable, on the other hand. The Unrelated or the Unknown is absolutely ineffective and valueless as a principle of explanation for the known and the conceivable world of realities.

Reality, then, whether in the form of concrete actual things and minds, or when considered as that vague sort of Unity with which our thinking endows the entire system of such beings, or when converted into an explanatory principle and called either "Absolute" or "World-Ground" — is always known as a Being-related. But if one keeps asking, "What is it really to be related?" one can only answer with the tautology: "It is, in general, just this — to be related." When interpreted by an appeal to that basis of experience in which the conception of relation has its origin, this plainly means: "To be related is to be an object of knowledge, because all knowledge is constituted through the function of relating faculty." But the being-related in reality of other selves, and of things in general, cannot be conceived of as wholly dependent upon the functioning of *my* relating faculty, or of the relating faculties of the other finite selves, who with me constitute the community of human minds. The total system of actualized relations is not mentally represented in any one stream of human consciousness; nor in all these various streams of human consciousness, considered in their entire flow. Reality, in the large and considered as a system of relations, is too complex and vast for human minds completely to compass. Indeed, there is no portion of Reality, no

single real Thing, whose internal and external relations are all completely and infallibly known by the entire race of thinking men.

Our reflective thinking is not, however, without ample and satisfactory means for knowing what it is really to be related. This knowledge is like that which we have of all the categories; for they are all forms of being as known to us, and not simply forms of knowing. It is in *self*-knowledge that relating as a function of the knower, and reality of being related, are both actually united. My knowledge of my Self, like all my other knowledge, is dependent upon the development of my intellect, of my relating faculty. Every time I know myself, the achievement implies that I actively relate the different *momenta* or aspects of conscious life to one another and to the subject called Ego or Self; and also relate this Self to other beings in the world of my experience. But to achieve this kind of knowledge I must actually *be* related, as I know myself to be related. For it is actual changes, and actual states and actual forms of mental representation, whether they have or have not any reference external to myself, which are the objects of self-knowledge. Or, putting the case abstractly: as a knowing Self, I actively relate, or bring into the unity of an object of cognition, the different factors of experience; but as a self known, I am an actual living unification of different factors of being. If to know, as a self knows itself, is to relate, — then to be, as a self knows itself to be, is to be really related.

What has just been said amounts to this important conclusion: *Really to be related is really to be as I know myself to be — a systematic and unitary thought-being.* So far as I really am a being related — an actuality of relations — I am not dependent upon the knowledge of other knowers for this being. I am what I am, whether you know me to be such or not. But both as knowing myself, and as being my Self, I am a dependent being. In my knowledge and in my being,

I am dependently related to a system of beings which I cannot identify with myself. Yet these beings, too, I must know and conceive of after the analogy of my self.[1] This is as true of the so-called category of relation as it is true of any other of those fundamental forms under which all human knowledge exists and develops. I know other selves only in terms of internal or external relations. Every other man is known to me as a being that is the subject of changes in the stream of his consciousness which he relates to each other, and to himself, as I relate the conscious changes in that stream of consciousness I call myself. He is also a being that stands in essentially the same relations to other men, and to the system of physical things, as those in which I stand. And now as to what it is for him and for me, and for all other human beings who have developed enough to *know* anything, to be related in reality, we can only say: It is actually to "lead the same kind of a life" that each one finds himself leading. This is a life which is an actualized system of relations, all referable to one subject, in so far as they are internal, and yet all implying other actual systems of internal relations, to which this particular life stands dependently and externally related.

And what is true of minds respecting this category is also true of things. So far as the application of the conception of relation goes, things are precisely like selves. In order to be actually related, and not merely related in those streams of consciousness which know themselves and which call themselves men, things must have at least a certain amount of self-hood in themselves. No reality can exist simply as a system of relations constructed by some other reality; but it must, so to speak, be in fact a *self*-constructed and *self*-consistent system of relations. This it *must* be, in order to vindicate any slightest claim to existence in reality. This

[1] Compare the chapter on "The Knowledge of Things and Knowledge of Self," chap. vii., Philosophy of Knowledge.

takes us back to the truth that a real Thing must be a thought-unity; a series of states, that has set itself into a kind of partial and temporary independence by behaving in consistency with some idea. *What*, however, this particular thing, A, must be, in order to be actually related (and it cannot really be at all without being actually related), just *that* every other particular thing — whether B, C, D, etc. — must also be. Indeed, the partial and temporary independence which things must have, in order to be regarded as individuals, is itself only their more or less consistent forms of reaction upon an environment of other beings. Thus under the category of relation the whole world of concrete realities appears as a vast system of relations maintained amongst beings that have, at least, a partial and temporary existence as "self-constructed and self-consistent systems" of relations. The interior relations of each being, whether Self or Thing, are themselves, as it were, dependent upon and somehow absorbed in an all-inclusive System of Relations.

The entire collection of concrete real beings — things and selves, actually known or only ideally conceivable — is actually inter-related. Only thus can any one of these real beings be known; only thus can the collection be conceived of as a system, as constituting one World. What now must this category mean, when we yield to the compulsion which the inherent constitution of all human knowledge imposes upon us, and apply it to the entire collection of beings, — to the one World? Nothing different from what we have already found it to mean. For the categories are not to be threatened or coaxed. They do not change their nature, when applied to Nature — not even if this word be spelled with a capital. They do not bow to the demands of aspiration, — not even when men begin to talk of the Absolute or of God. *It follows, then, that a System of Relations, conceived of as a totality and complete in itself can only be actualized in terms of a Self.* In vain does the relating faculty strive to rid itself

of this necessity imposed by its own constitution. Would it not be well to hail the necessity joyfully as a revelation of fundamental truth? The mind of man cannot conceive of "the unrelated," under such terms as the Absolute, the Unknown, the All-One, the self-consistent Whole. All such terms have their uses and their values, in the effort to set forth certain aspects of Reality, conceived of as a System of self-constructed and self-consistent Relations; they also have important bearings upon the practical life of morals and religion. But the truth of man's cognitive experience remains the same: The world that is either immediately given, or lies implicit, in this experience is necessarily a unity of related beings; and this world can be conceived of as such a unity, only in recognition of the truth that it is really — *so far now only as the category of relation goes* — an Absolute Self.

We have stated the conclusion of a criticism of that conception which is "the mother of all the categories," under the following limitation, — "so far now only as the category of relation goes." This limitation was added in order to avoid an injudicious and illogical haste in trying to reap the fruits of critical and metaphysical cultivation. But even when stated with this limitation, there are two most important corollaries which follow immediately from the main proposition. And, first: The total system of actually existing relations cannot be conceived of as related in an *external* way: It cannot be related to some other being, which is to be conceived of as standing, so to speak, upon terms of equality with itself. The rather must all actual relations be considered as really internal to this System; they are its "self-consistent" modes of behavior, the forms of its Life. They all belong to Itself; they are consistent with Itself; they are determined by Its own immanent principles of behavior. From different human points of view, the changing relations seem partly subjective and partly objective, partly imaginary and partly true to actual fact. From these

points of view, the distinction between relations that are merely in thought and relations that are also in reality is a distinction valid for the experience of the individual knower or mind. From these points of view also, certain relations are internal and belong to the Self, and certain others are external and belong to the Self as somehow united with other selves and other things. But these points of view, although valid for cognition and revealing to us the very nature of reality, are only partial. *From the point of view from which the entire System of Relations must be regarded as having a Unity analogous to that which we know ourselves to have, all relations appear as alike interior and yet actual.*

It is in some such way as the foregoing that we must, for the present, understand the phrase, an "*Absolute* Self." This is the very opposite of regarding the supreme, the complete, Reality as equivalent to the Unknown, because the unrelated. This Self is "absolute," not because It is unrelated, but because all relations must be regarded as, for It, self-constructed and self-consistent. Within this system — and only as within this system can any concrete reality exist — all particular beings have a kind of double actuality. They are partial and temporary unities, comprising a variety of internal relations, and standing to each other in a variety of external relations; but the One Reality constructs and comprehends them all; for all of their relations, both internal and external, are within the One Reality.

But the second of the two corollaries which follow from the attempt to apply the conception of relation to the total system of real beings is equally important. We have spoken of self-knowledge as bringing into our cognitive experience a certain system of relations that are partially "self-constructed and self-consistent." Such language implies, however, that intellect and will combine in the realization of such a system. It is intellect "*functioning*," or active intelligence, which constructs that system of subjective relations which is called

knowledge, and which is in its essential character a relating of different items and "momenta" of the flowing stream of consciousness. It is the same active intelligence which becomes the object of knowledge, whenever the Self is known. In other words, to know relations, and to be related, as the knowing self acts, and the known self exists — this is nothing less than to live the life of a conscious intelligence. And only as some knower projects into the otherwise senseless and dead thing the semblance of a principle of active intelligence can even that "thing" be known as actually existent. So far forth and only so far forth, as it constructs and consistently maintains the appropriate internal and external relations, can any existence really be related. But this is to realize both Intellect and Will.

What is true of the individual beings of the world is *a fortiori* true of the system of related beings, of that One Being in which all actual relations have their ground. An actual system of relations can exist only within such a Reality as combines all the powers of an active intelligence, and is thus a living and unifying Intellect and Will. But here are conceptions of Unity, Force, Law, and Final Purpose, either quite implicit or only half concealed.

CHAPTER VIII

TIME

Both implicit and express reference has already been made to two of the universal forms of knowledge whose characteristics differ in a marked way from those of all the other categories. Analysis of the all-inclusive concept of reality showed that every particular being is known as existing "in time"; and that every other being than one's own — in the most interior and self-centred conception of the self — is also known as existing "in space." Neither is a knowledge which shall set us into relations with other beings in a system of reality, possible without applying to ourselves some of the various modifications of spatial qualities and spatial relations. No ethical or social existence or development is known or conceivable by man, which is not based upon a certain confidence in the trans-subjective reality of space. But especially in discussing the metaphysics of change and of relation, constant reference was either made or implied to the universal character of the conceptions of time and space. The particular beings which are made real to man by his experience with natural objects and with his fellow men, all exist, change, and enter into various relations, "in time" and "in space."

What, however, is the significance for metaphysics of the language popularly employed when speaking of these conceptions; — since this language is so notably different from that employed in speaking of the other categories? All minds and things are said to exist, to change, to develop, to be related, "*in* time" and "*in* space." But for such conceptions as "pure

being," change or becoming, and relation, similar terms are not customarily employed. To be sure, one might say that "things fleet" and "things extend," in somewhat the same way as that in which they are said to exist, change, grow, and to stand related. One may also depart from the plain talk of workaday life far enough to remark, that "the times are *in* a process of change," or that "the places of our former acquaintance are no longer *in* existence."

If all the varied uses of different languages are taken into the account, it will appear that the conceptions figuratively expressed by the preposition "in," or its equivalents, are exceedingly numerous and difficult to bring together under any single conception. Their employment, however, in connection with abstract conceptions answering to the words "space" and "time" implies that what answers to these conceptions is thought of, not as a reality, nor a quality, nor a relation of realities, but as a *medium* of realities. Things exist, change, grow, and stand related; and among the qualifications which can be applied to their existence, change, and growth, are those of duration and extension. But when an attempt is made to express our conviction as to what in reality it is that makes possible the enduring and the extension of things, as well as their changes, their growth, and their varieties of relations, we find ourselves forced back into the same significant figure of speech. The answer must always be given by a repetition of such phrases as "*in* time" and "*in* space." Time and Space are thus regarded in the light of universal "media." Things, with all that they really are and all that belongs to them, are "in" these *media*.

It is characteristic of naïve, popular consciousness to accept without reflection the figures of speech which it employs for the expression of knowledge and for the practical purposes of communication between men. The positive sciences, too, even when the conceptions of time and space constitute the chief material of their investigation, do not essentially change

the significance of the popular figures of speech. Mathematics and mathematical physics indeed, treat the succession and duration of things, their extension, and their changes of position, as though they were entities. They thus develop an elaborate science of temporal and spatial relations, and they work out mathematical formulas for the exact statement of these relations. But the student of these sciences knows quite well that he is only dealing with abstractions; that there really are no successions and durations and extensions, existing independently of concrete realities; much less even is there any single existence corresponding to the conception of duration as such, or of extension as such. He needs only a little reflection to convince him that these qualifications of things must somehow be considered as resulting from the *orderly arrangement in their action upon him of different "momenta," or parts of Reality, which have to be combined into some kind of a living unity in order to lay claim to be real existences.* Of course, too, those sciences which make no pretence to a scientific treatment of temporal and spatial qualities and relations do not need to depart from the popular and figurative point of view. They may be content to employ naïvely the figure of a "medium" *in* which realities exist.

Metaphysical theories, with their ontological conceptions answering to the words, Space and Time, find no difficulty in accepting the popular and the scientific points of view, — at least, so far as their negations are concerned. Indeed, they are all accustomed to deny an actual existence to these categories, whether as themselves entities or as states and qualities of entities. Glaring internal contradictions can be shown to result from the attempt to regard space and time as entities. Metaphysicians are wont to suppose that they have conferred some great favor upon common sense and upon physical science when the results of the uncritical ways of regarding these categories have been pointed out.

The truth is, however, that this negative criticism has been

so often and so thoroughly done, that no great amount of originality can ever be displayed in doing it over again. This is especially, though by no means exclusively, true of metaphysics since the beginning of the reign of the Kantian criticism. The Hindu philosophy discovered centuries ago that time and space are not only illusory, but are the creators of illusion. To know reality only as spatial and temporal is to be the victim of Mâya. Kant's critique of these transcendental forms of all sensuous cognitions, and of imagination as based upon and limited by such cognition, was relatively meagre and dogmatic enough. Even Schopenhauer, who intended to exalt the truth of perception in opposition to the truth of ratiocination, finds in time and space nothing more sure than those subjective forms of differentiation which arise from the illusory activity of intellect; and intellect is mere product of the brain, the way in which blind Will gets itself duped with show of knowledge. But as to the true Nature of Reality, space and time have, of course, nothing to tell us.

Now if any modern student of metaphysics were likely to adopt the senseless delusion that time *is* really some kind of a long-drawn out entity, which has only length and neither breadth nor thickness, or that space *is* actually a spread-out being with the three dimensions of length, breadth, and thickness, it might seem worth while to take pains over such crudities. Then the customary questions might be repeatedly proposed: "*In* what is this entity of time drawn out?" and "*In* what is the three-dimensioned being of space spread out?" It seems to us, however, to promise a better motived and conducted course of criticism, if we begin by accepting the confession of everybody that, somehow, space and time are like "*media*" for the orderly arrangement of existences, of changes, and of relations.

And, in truth, what the common-sense of folk generally, and of the student of physical science in particular, objects to

having concluded by the metaphysicians is an affair of quite another kind. Minds and things are entities, — so the average man *thinks*; changes actually occur in them, and relations actually exist between them. Just as firmly does the popular and naïve consciousness insist on the conviction that time and space have something to tell us about the Nature of Reality. And when reality is spoken of in connection with the conceptions of time and space, its meaning does not correspond to what Kant meant by "phenomenal reality." The cognitive consciousness of mankind refuses to credit the doctrine of the *merely* subjective origin and applicability of time and space. In this refusal our sympathies are with the cognitive consciousness of mankind, — and this to the extent of accusing the scholastic metaphysics of having, as a rule, sophisticated the whole problem. In other words, the conditions, nature, and valid implicates of our knowledge of reality are such as to refute the Kantian view of the transcendental ideality only, and to compel the opposite view of the transcendental reality also, of both time and space.

This, then, is the state of the problem offered by the categories of time and space. They are universal and inescapable forms of knowledge; and knowledge always has to do with reality. But when one comes to inquire into the relation existing between these forms of knowledge and either the concrete realities or that System of Reality which it is the aim of metaphysical thinking to conceive of as a whole, this relation appears peculiar — even unique. Time and space cannot be identified with any of these realities, or with this system as a whole; neither can they be spoken of as qualifying particular beings, or as expressing one aspect of the sum-total of being, in the same way as can the other essential characteristics of reality. Here, then, is an apparent contradiction, — or rather a puzzle which requires further reflective thinking for its theoretical solution. For the metaphysics which resolves time and space into purely subjective

forms of knowledge, leaves men a world of *mere* "appearances" for their known world, and offers to their faith an unknowable abstraction — a Unity *that is*, but is *no what* — as the only "Reality." *How, then, shall we so interpret our cognitive use of the categories of time and space as to construe reality in valid terms of human knowledge?*

The question just raised we shall now try to answer for the category of Time. This answer is most fitly approached by briefly noting the principal points respecting the psychological origin of the time-concept. With all growth of knowledge the development of cognitive "time-consciousness" is inseparably connected. The connection is reciprocal. For time-consciousness never develops in the form simply of a knowledge of particular objects in the "stream of consciousness"; — never, also, as a conception of merely empty time.

In tracing the psychological origin of this category, the experience in which the most primary and rudimentary time-consciousness is formed must first of all be considered. This experience consists of a succession of psychoses, all of which are conscious processes of greater or less duration, and are capable of being marked off from each other by the subject of them, through their differences in intellectual, emotional, and volitional content. Ordinarily these glide into each other with a somewhat smooth and continuous flow. Not infrequently, however, sudden and rude shocks occur, which bring into sharper contrast the different qualifications of the successive states, and so emphasize both the duration of the single states and the transition from one state to another. But this sort of experience affords material for the development of a genuine time-consciousness, provided — but *only provided* — some intelligence can look upon it from an ideal point of view. As a mere feature of the stream of consciousness, unrecognized and not understood, such an experience contains nothing fully to account for the knowledge of Self or of Things as "really being in time."

Neither is it through mere association of conscious processes, however complicated and habitually experienced, that a true time-consciousness can be developed. Such a development requires discriminating consciousness and growth of intellectual powers; and so much intellectual discernment is not a simple affair. On the contrary, it involves voluntary attention, with its "alternate diffusion and concentration," moving "like the foot of a snail, which never leaves the surface it is traversing" (to borrow Dr. Ward's illustration). It involves also growth of self-consciousness; since recognitive memory is necessary to any growth of the higher forms of time-consciousness. Events must be set by such memory into a certain time-relation with other events, all of which belong to the cognitive experience of the same self, as a succession of psychoses. Inference and constructive imagination are forms of mental life that are also necessary to the rise and the growth of the same experience, all of which includes this category. The time during which I have been existent, although always in a succession of changing states, is by no means all covered by my most earnest and successful efforts at recollection; much less is it all representable in terms of any one act of recognitive memory. Between the definite "I-am-now" of self-consciousness and the less definite "I-was-then" of memory intervenes the indefinite "I-have-been" of inference; for this link is not to be filled up either by self-consciousness or by memory, but only by a combination of thought and imagination which sketches a mere schema of possible particulars. And these same faculties project into the third form of time — the future — what is neither remembered as past nor consciously envisaged as belonging to the present.

All the life of the Self — as feeling, will, and intellect, in various forms of the manifestation of these faculties — is therefore concerned in the origin of time-consciousness. If now, from this point of inquiry, the question be raised,

"Where, then, is time?" the reply must be: "*My* time is *in me*; and yours is in you," etc. That is to say: Time, as the subjective but universal and necessary form of cognitive experience, is both actually experienced in the life of the self and is also all constructed by the activity of the self. It is, so to speak, carried along with every act of knowledge as the formal condition of any such act taking place. If from the same point of view an explanation be sought for the three kinds of time, — present, past, and future, — psychology answers in essentially the same way. Present time for us *is* the construct of our own self-conscious self, dependent upon the "grasp of consciousness" for its clearness of outline, its fulness of content, and its relation to other moments in the life of the same self. Past time *is* the construct of our own self, exercising recognitive memory and so relating other moments, with more or less clearness of outline and fulness of content, to the present moment. And future time *is* real in anticipation, when, by an act of thought and imagination we outstrip the actual succession of our self-conscious states, and, abstracting from what is happening now around us, project the self into conditions different from those known to be present. For the only way to "realize" the future is to imagine one's self so changed in feeling, thought, or environment, as to separate between this self to be, and the now self-conscious or the remembered self. The leap forward in anticipation and the leap backward in memory carry with them the same characteristic existence, and involve the exercise of the same mental activities; only the emphasis laid upon these activities in their distribution is different. This truth is illustrated by the well known fact of psychology that, subjectively, memory binding us to the past and imagination transporting us into the future are often mingled and even interchanged. Thus men not infrequently remember what has yet to be, or what has already been only in imagination; while what has really been in the

past often appears to them rather as "in a dream," — that is, as matter of the image-making faculty in its most illusory forms of activity.

From the psychological point of view simply, then, there is no difference in the "actuality" of time, whether present, past, or future. Each of these three forms of time really *is* — only as the construct of the active self; neither of them is any more real than are the others except as it is made to be real by the action of this self. It is customary, indeed, to affirm that only present time has reality; only "now" actually is. Thus Lotze, even after confessing that "there would be no meaning in the statement that things exist in time, if they did not incur some modification by so existing which they would not incur if they did not exist in time," [1] goes on later to deny the reality of both past and future, and to reduce to an abstraction "the proper meaning of that reality which we ascribe only to the present." The vacillating position which this philosopher holds toward the category of time is, perhaps, as well summed up in the following, as in any other sentence quotable from his writings: "There is no real time in which occurrences run their course; but in the single elements of the universe which are capable of a limited knowledge there develops itself the idea of a time in which they assign themselves a position in relation to their more remote or nearer conditions as to what is more or less long past, and in relation to their more remote or nearer consequences as to a future that is to be looked for more or less late."

It would not aid our discussion to point out the contradiction between these two sentences of Lotze's, or to show how profoundly his treatment of the category of time involves him in other contradictions with the fundamental place given in his philosophy to the principle of becoming. But these, and all similar declarations so rife in systems of meta-

[1] System of Philosophy; Part II., Metaphysic; Book II., chap. iii.

physics, are challenges to review the actual facts of cognitive experience. These facts, when treated from the standpoint of psychology, remind us that the "now" of consciousness is no more real than is the "there-was" or the "there-will-be" of consciousness. Psychologically considered, in every act of recognitive memory the past is realized; and in every rational act of anticipatory inference and prediction the future is realized. Without development of time-consciousness in *all* its three forms, as consciousness of the present, consciousness of the past, and consciousness of the future, no *knowledge* can take place.—Things can no more be real "in" the *mere* present, than in the long past or the remote future. In other words, in order that any real beings may exist and become known to us, the continuance of time — as present, past, and future — must be regarded as the medium in which these beings exist. So that if time were *purely* subjective, the temporal existence of real beings at all would not be secured by positing some peculiar reality for that particular, ever changing and never abiding moment which we call "now." The actuality of time present alone does not suffice to enrich the content of reality.

The psychological origin of time-consciousness, is, then, to be found in that complex and peculiar form of functioning to which the mind subjects its own states. As an active, comparing, and self-conscious intellect, it knows all these states as more or less enduring, and as successive. Those states whose content is constituted with little conscious reference to their place in an order of succession which involves other states, it knows as its own present. Other conscious processes it knows as memories, and these are set somewhere in a place as "past" for the self; still others it projects into imagined (not merely self-conscious or remembered) relations as states that may yet be. All these three ways of knowing its own states in an orderly way necessarily enter into the experience in which its consciousness of time originates and grows.

Not only is it true, however, that each one's time-consciousness is his own mental construct, but each one's time-consciousness is different from every other's — peculiar to himself. Both observation and experiment demonstrate this. The "grasp of consciousness" differs in different individuals; and it is the grasp of consciousness which gives to the "now" of time-consciousness all the reality it has. This active constructive power differs greatly in dependence upon age, upon original constitution, voluntary attention, interest, education, and environment. The same thing is true of time-consciousness in its imaginative work of constructing those brief intervals of time that elapse between two similar events in consciousness. Very young children have almost no power of this sort; with them, indeed, the past has little or no reality. But the same restricted use of imagination makes it impossible for undeveloped minds to realize in consciousness, as a matter of time, any future event. They will have everything they desire in the all-absorbing, but itself vague and feeble, present. So do adults, too, differ greatly in respect to both the perfection of their memories of the past and also their reach of anticipatory image-making toward the future. Some men come to live much *in* the past; others much *in* the future; but most men live most in the present. All of which means, simply enough, that some streams of consciousness consist mostly of memory-images; some of perceptions and self-conscious thoughts and feeling; some of projected fancy-images or inferences taking the form of anticipation. For each individual self it is also true that time-consciousness itself differs, in its grasp upon the present, in its range of memory, in its vividness of projected image-making, in its confident ratiocinations.

There is, therefore, no unity to time-consciousness, regarded as a purely subjective affair, which can apply beyond the unifying *actus* of the Self. There is no reality to *one* Time, when viewed from this point of view; there are only times many,

and varied, and incapable of producing even the appearance of a real world of things. Being themselves "out of joint," they cannot produce a system of events known as happening in one time. The merely subjective view of this category will not, therefore, satisfy the conditions of man's experience with realities. For these conditions require at the least the realization of a certain unity, and some realistic basis for such unity, among the different time-consciousnesses. Otherwise, men could never "come to time," whether in a social way or in the way of agreement upon the bare facts of the physical and natural sciences.

Let the utter inability, the abject imbecility, of merely subjective time be illustrated by the following hypothesis: The stream of consciousness called A, considered time-wise, is a certain ordering of psychoses, such as A_1, A_2, A_3, A_4. . . . A_n. Some of these psychoses have reference to the present; some are memories of the past; and some are anticipations or predictions of the future. But the stream of consciousness called B is also, considered time-wise, a certain quite different succession of psychoses, such as B_1, B_2, B_3, B_4. . . . B_n. Now, without the hypothesis of some bond of unity, it is left to chance whether the "now" of A and B shall ever be actually coincident — a present time, common to both streams of consciousness in its applicability to any particular object. Without some similar hypothesis it is also a matter of pure chance whether the memories of both shall ever coincide in their acts of locating events in past time; whether they shall ever give to any event the same location in the ideal stream of past time. Why should A pick out the same locality for the event X, which is given to the same event by B, unless the event itself has something to say about its own proper location? But for both A and B the event X was originally a mere mental representation, perhaps of the presentative order; and regarded from points of view which are wholly subjective and so disparate, it could

not determine both streams of consciousness to locate it in memory at the same place. What is an obstacle in the way of preventing *A* and *B* coming to some "common time" is an overwhelming obstacle in the way of any multitude of men coming to the same time. Thus the purely subjective view of time-consciousness destroys the possibility of society, of history, of the intercourse and development of the race. And that it destroys the possibility of every form of science which requires the exact measurement of time, there is no need even to illustrate.

It is customary to rescue time from the devouring maw of such solipsistic idealism by compounding a doctrine which maintains both the objectivity of time and the relativity of time. To avoid the ambiguity which the words "objective," etc., have in such connections, we will take the liberty of sometimes substituting for it such other terms, as "trans-subjective," "external," etc.

The conception which we wish now to examine is not ambiguous; it denies that the duration or the time-order of actual events is dependent upon the duration and the time-order of the individual minds which perceive or conceive of the events; it affirms that things do *actually* come into existence, change their states and relations, and cease to be, as respects time-form, as well as respects all our other forms of knowing them. Things are *really* "in time;" and the reason why we do not always know them as they really are, — do not perceive or conceive of their durations and arrangements in time in such a manner as that our time-consciousness is an accurate picture of these transactions, — is to be found in the nature of ourselves and in the character of our relations to things. That all men's ordinary knowledge and all their scientific formulas are based upon some such assumption as this, does not admit of doubt. Let its meaning be made clearer and its validity tested by throwing it into a form of illustration such as has already been adopted. Over a large portion of the earth the

rising and the setting of the sun, and its included movement through the sky, are given in a certain time-order to millions of human beings. The objective or external series of transactions is, as a matter of acknowledged fact, mentally represented in as many millions of different ways. These differences themselves are partly resolvable into mental differences, — of attention, memory, grasp of consciousness, etc., — and partly into more important differences of physical relations. If the time-consciousness of any three persons, *A*, *B*, and *C*, who have repeatedly regarded this object from substantially the same point of view, does not accurately correspond, the reason for the failure is said to be found in some subjective cause; — the cause is a mental fault or inefficiency peculiar to one or more of the three. *If* all three had been equally attentive, accurate in memory, and trustworthy in description, the time-series of the sun — S_1, S_2, S_3, . . . S_n — would have been "substantially the same" in each of the three streams of consciousness.

Now such a mode of conception as that above plainly contains something which cannot be explained as wholly due to the *a priori* character of the time-consciousness in which *A*, *B*, and *C*, all alike share. It is not a matter which can be resolved into either inherent or acquired characteristics of time-consciousness alone. For two similar yet differently located mental representations — such as the sun that rose in the morning and the sun just setting, or S_1 and S_n — do not necessarily result in the mental representation of a time filled, and a space passed, by one and the same real object; they do not necessarily so result, even if we are prepared to disregard the fact that *A*, *B*, and *C*, *agree*, in the main, in their time-series of representations. The morning sun can easily be made to "appear" to one eye on the horizon and to the other in the heavens as at "high noon;" subjectively regarded, it is just as conceivable that its transit might be in the reverse of the actual direction; or that the sun might hang stationary —

as, indeed, it apparently does for a considerable time in the summer of the highest latitudes. From the point of view of the time-concept only, *S* might move from its point of rising to its point of setting, without appearing, or even actually being, at different points between; thus, the object now appears at *r*, and then the same object appears at *s*, without any intermediate appearances along the line *m* ($r \overset{m}{\text{——}} s$). It is only the nature of space which prevents such conceptions or such actual events as this. Nor can it be claimed that any particular time-order belongs, of necessity, to this or to any other natural event, merely because of the necessary and *a priori* nature of time. Now it is just this *particular time-order* which constitutes the essential feature of the knowledge that the sun rose this morning and has just set; and it is the agreement of a number of subjective time-series in the consciousness of the same trans-subjective or external order which constitutes the metaphysical problem offered by every such experience with things. In other words, why do *A*, *B*, and *C*, find their time-consciousnesses agreeing in the mental representation of an object, which all alike regard as not themselves, going through a series of actual changes in the order $S_1, S_2, S_3 \ldots S_n$?

But now we are reminded that of the millions who mentally represent the Sun as rising, passing across the sky, and setting on its other side, the great majority by no means accord with the time-series of *A*, *B*, and *C*. For the men who live on the hill-top and the men who live in the valley the actual series of changes, $S_1, S_2, S_3 \ldots S_n$, is different, both time-wise and otherwise. And with every considerable change in longitude and latitude, from East to West and North to South around the entire globe the same thing is true. But to explain this our acquired knowledge of the facts emphasizes the influence of the trans-subjective time-order of the phenomena and not the subjective differences in the different streams of consciousness. The causes are chiefly resolved into changes in the

physical points of view. Thus *D*, *E*, and *F*, are required on scientific grounds, if they will represent the time-series S_1, S_2, S_3 . . . S_n, in accordance with trans-subjective facts, to agree with one another but to differ materially from the mental representations of *A*, *B*, and *C*. If the Arctic explorer were to experience the same subjective series as that experienced by the observer from the equator, one (or both) of them would be held to be suffering from an illusion. The actual relation of the two groups (*A*, *B*, and *C*, and *D*, *E*, and *F*,) to *S* absolutely requires that the time-order of their mental representations of *S* shall be markedly different. And here the important factor in the differentiation is the *behavior of S* — regarded as a series of changes that are trans-subjective and external to both groups of conscious observers. To account for such experiences by alleging the subjective character of time-consciousness is rightly regarded by the man of common-sense and by the man of science as entirely unsatisfactory. When Benvenuto Cellini saw the sun in the midnight darkness of his cell, his experience may be referred to a subjective ground. But when *A*, being in Rome at the same absolute time with *D*, who is at the North Cape, fails to see the midnight sun which the latter clearly sees, the causes for this difference are to be found in the different objective relations of *A* and *D* to the real being of *S*.

But there is little need to multiply illustrations; although all human experience could be drawn upon, if need were, to furnish illustrations. For human cognition cannot take place without embodying, in its very structure, the trans-subjective application of the category of Time. What has particularly been emphasized by the just previous discussion is this: *The fullest possible acknowledgment of the relativity of all time-consciousness, and especially of all mental measurements of time, does not in the least impair men's confidence in the trans-subjective applicability of the concept of time.* For this relativity of time-consciousness is not described with fidelity to

our common experience when it is regarded as, essentially considered, a time-relation between mental representations. *This relativity is itself essentially considered, a manifold system of actual relations between each Self and a world of Things.* To convert the fact that the time-consciousness of the individual is a subjective affair, the conditions of which lie partly within the mental constitution of the individual, into a theory that the entire concept of time has only a subjective basis, is a leap in argument which overcomes all the difficulties only by disregarding them.

Nor are the facts of experience met by those metaphysicians who hold that the basis for the objectivity of time lies wholly in that *common* mental constitution which compels men to perceive, and conceive of, all their objects, as in time. For this theory settles nothing as to the causes in particular why men agree, within certain limits, and disagree within certain other limits, in respect of the duration and time-order which all individual transactions in the world of things appear to them to have. Both the agreement and the disagreement are such that its ground must be partly trans-subjective; the ground must lie, that is, in the actual time-series which belongs to the things that change. Or, to state the same truth in more concrete terms: All the changing states and relations of the object, *O*, are given to me in a certain time-series of mental images which are mine; and which are *my* time-consciousness as determined for this particular case. The moment I regard this series, E_1, E_2, E_3, . . . E_n (*Ego*$_1$, *Ego*$_2$, etc.,) as communicable to you, and debatable with you, I make three assumptions. First, I assume that you are going through with another series of mental processes, A_1, A_2, A_3, . . . A_n (*Alter*$_1$, *Alter*$_2$, etc.), which is essentially like mine, in that it is a succession of psychoses "in time" and, is referable to the same object. But, second, I assume that this series is unlike mine, in that it is yours and you are immediately conscious of it. And, finally, besides these dif-

ferences which are due to subjective causes, your time-consciousness is assumed to be differentiated from mine, on account of the different relations in which you and I stand to this same object. Here, then, are two subjective time-series, which have their likenesses and their differences explained by the assumption of different relations in which the two subjects stand to the same series of changes in the object-thing. That is to say, on the supposition that O actually goes through the time-series, O_1, O_2, O_3 . . . O_n, I pass through the time-series E_1, E_2, E_3 . . . E_n, and you pass through the time-series A_1, A_2, A_3 . . . A_n; but the cause for E_1 etc., being unlike A_1, etc., is to be found in the general fact of the two subjects E and A being constantly in different relations toward the trans-subjective time-series, O_1, O_2, O_3 . . . O_n.

The assumptions necessary to explain any common agreement amongst men as to the particular character of a world-order of happenings in time are similar to those considered above; but, usually, they are infinitely more complicated. This complication, moreover, is chiefly created on the side of things rather than on the side of selves. To be sure, there are no two men, the subjective-conditions of whose time-consciousness corresponds in all particulars; but so far as the metaphysical treatment of the category of time is concerned such merely subjective particulars may be disregarded. The general fact of substantial agreement in the essentials of time-consciousness — the fact, that is, that all men perceive and conceive of all events, psychical and physical, as happening in time, and as having some duration and place in an objective time-series — is explained by referring it to the constitution of the human mind. Time-form, as present, past, and future, is the way in which all men perceive and conceive of all changes as taking place, whether in themselves, in other men, or in things. But the complex of things is a multifarious and infinitely complicated system of happenings. For every "now," regarded as covered by the grasp of any human con-

sciousness, the number of happenings which occur within this one system — in Nature so-called — is quite incalculable. For every "then" in the past, whether as definitely fixed by memory or imagined vaguely, the same thing was true. For every "then" in the future, no less innumerable will be the happenings with which it will be filled when it has become the "now" of that future time. The world's time is no thin line in which a feeble grasp of consciousness brings fitfully together some half-dozen simple elements at most, and thus imparts to them that unity of reality which things have when happening for me, in the same time. But considered as past, present, or future, the *World's* time is no whit different from *my* time. Its "now" is the same as my "now" — considered time-wise. And for the world to have been, ten thousand years ago, when I was not, is no different as respects the world's relation to time from that in which I am now standing to my being of ten years ago.

It is, however, in the *number* of the happenings, and the *complexity* of their interrelations, that the world's time differs from the time in which every individual's stream of consciousness flows on. The attempt is sometimes made to represent this difference by increasing the breadth of the stream of time. But in the world-wide series of events it takes no more of a "now" for ten million times ten million things to happen than it takes for a single psychosis in the "now" of a human consciousness. This is not because the World does not change in time; it is because the World can do so much more than you and I can do in a given amount of time. In fact, what you and I can do is a part of the world's infinitude of events, — all in the same time. While you think, I dream: and then while I study, you eat your dinner; in the same meanwhile, hundreds of human beings are born and die; countless myriads of microbes and living germs begin and end their existence; the planetary system and all the heavenly bodies are bowled along

incalculably complicated courses throughout thousands of miles of space; and who shall make a beginning of even conceiving what an infinity of changes an infinity of atoms are going through?

Let now the effort be made faithfully to present that picture of the trans-subjective application of time which human science, in its greatly enlarged knowledge of the nature and the transactions of the world of things, considers necessary to its very life. Note well: as regards the meaning of the category of time, and its applicability to things, the utmost refinements of science differ in no respect from the coarsest notions of unreflective common-sense. The speed with which some of the cosmic processes go on is, indeed, such that no grasp of consciousness is quick or deft enough to represent them accurately. On the other hand, the stretches of time which must elapse while others of these processes mature, prove equally baffling to imagination in its efforts to present the infinite extension of time. But, as we have already said, the kind of time in which science sets these processes is the same as that in which each one's own little world of experience is set. It is only the number and complication of the changes in states and relations which are taking place at every instant that distinguishes the World's time from the time of the plain man's consciousness. In other words, "*to be in time*" *is one and the same thing for you and for me, and for the whole system of realities.*

Now this infinity of simultaneous transactions may fitly be symbolized in the following way: Let ∞ stand for the world's happenings — all of them, *quoad* their infinity. At *no* time are they representable by a mere $A, B, C, \ldots N$; or an $(a+b+c+d)+(b+c+d+e)$, etc.; as though you and I, and all the men of lofty imagination and scientific training could, by any combination of mental effort, at a single instant, picture them completely. Suppose, for example, an agreement were made amongst all the savants and philosophers of earth's millions

that, at a given instant of absolute time, each one should perform an appointed task of mentally representing a certain number of the world's transactions at that instant; would the results, when compounded, give a full and accurate picture of the world's then present transactions? Not better than the analysis of a single salt drop would enable us to comprehend the tides, and storms, and monsters strange and terrible, that make up the reality of the ocean! It is no thin strip of actuality, no cross-section of a cylinder infinite in length, but measurable in diameter by standards of human imagination and intellection, of which we are speaking now.

Time-wise, however, the life of the world is, according to the conceptions of science, as easily representable within any given area, as is the life of any one of us. It *is* in reality a succession which may be symbolized by $\infty_1, \infty_2, \infty_3, \ldots \infty_n$. But no ∞_2 is to be conceived of as separate from its antecedent ∞_1, or its sequent ∞_3; — whether as respects the nature of its total content, or by the interposition of a barrier of empty time between the two. For this actual world of ours cannot be known as created wholly anew at every instant of its existence in time. And this conviction of enduring existences, and of real causal connections which constitute an infinity of bonds between each ∞ in the series, leads the thought backward to the categories which have already been examined. It also involves conceptions which still await examination, — such as those of the world's Unity, and of the influence of common forms and forces acting under unchanging laws. Although time is necessary for all these aspects of the world's life, the reality of time is no sufficient explanation of them. Of course, also, any thought of interpolating some fraction of empty time between the successive members of the series, $\infty_1 \ldots \infty_n$, is a violation of the very assumption with which the mind starts, and under which it constructs this picture of such a series. *The world's time is never an empty framework in which hypothetical transactions*

might conceivably take place. It is nothing but this continuous succession of an infinity of interrelated changes — the flow "in time" of the infinitely rich content of the Being of the World. The arrogance of subjectivism can reach no more transcendent height than to suppose that the actuality of the world's time is in the least degree affected in character by what men think or imagine about it.

For, on this last point, it is at once evident that human time-consciousness is itself only one little, fitful, and fragmentary series of happenings in the time-series of the Being of the World. The total series represented by $\infty_1, \infty_2, \infty_3 \ldots \infty_n$ includes the series which is the so-called "stream of consciousness" I know as my Self. And it is equally kind and ready to afford its fostering embrace, with you and with all other streams of consciousness. To recur, then, to the illustration already employed: suppose that on account of complicated differences in relations, the trans-subjective series $O_1, O_2, O_3 \ldots O_n$ (*Object*), is mentally represented by me as a series $E_1, E_2, E_3 \ldots E_n$ (*Ego*), and is, in a different way mentally represented by you as the series, $A_1, A_2, A_3 \ldots A_n$ (*Alter*); then all the series gone through by O and E and A, and all the intermediate series in which the "complicated differences of relations" amongst these three beings consist, are alike included in the series $\infty_1, \infty_2, \infty_3 \ldots \infty_n$. Indeed, the time in which the actual transactions of the object take place, and in which your and my mental representations of its transactions take place, is alike the world's time. Our mental representations add nothing to and take nothing away from the character of this time; their existence or their cessation can only serve to increase or diminish the richness of the known content of the world's Being "in time."

In some such way as the foregoing must a system of metaphysics which is true to the facts of cognitive consciousness validate that knowledge of selves and of things upon which the plain man's convictions and the scientific assumptions

of all ages insist, as respects the application of the category of time to reality. Rightly understood, only this conception gives an ontology which is to be accepted and defended against all the attacks of philosophical scepticism and of theological dogmatism or mysticism. For both the extreme of scepticism and the extreme of mysticism, in their denial of an actual trans-subjective time-series "*in* which" all Reality exists, cut away at the roots the entire growth of man's cognitive experience. Realities that are not "in time" are not knowable or conceivable, are in no way to be distinguished from non-realities. A System of Reality, a real World or Cosmos, that is not existent "in time" is not knowable or conceivable: for the many beings whose changes of state and relation, as they fall under universal laws and ideal forms, constitute the system, must be united both for thought and for existence in actual reciprocity under the category of time.

Doubly futile is the effort to discover a history or any principles of development belonging to a World that does not actually exist in time. That conception which dominates all modern science and in its false and mistaken as well as in its true and well-taken applications, throws floods of light upon our intellectual treatment of the facts of experience — the conception of "Evolution" — is emptied of all significance when separated from the category of time. The human mind can maintain no valid cognition of reality — no *cognition* at all in any fit meaning of this word — without maintaining the trans-subjective applicability of the time-concept.

> "But if twenty millions of summers are stored in the sunlight still,
> We are far from the noon of man, there is time for the race to grow."

Without taking this concept in good faith we cannot even believe in our own reality; much less can we ground this reality in any world that is external to the individual's "stream of consciousness." Nay: this very stream is not

to be called "stream," or "line," "or "life," or "growth," is not to be treated genetically or examined scientifically, without self-consciousness, memory, imagination, reasoning, etc.; and all these psychical processes, or aspects of the conscious mind, implicate the incontestable validity of the time-concept. This is as true of Rip Van Winkle, when awakening from his long and dreamless sleep, as it is of the astronomer when eagerly watching a transit of Venus. In every conception of the Self the applicability of the category of time to a reality that is not wholly measured by the present existence of the conceiving activity is implicate in an inextricable manner.

From this main position, which, on the one hand, admits the relativity of all human time-consciousness and, on the other, maintains the actuality of a time-series as belonging to the life of the World, we are not to be driven by any form of mysticism,—no matter on what abstractions or negations this mysticism may be founded. *Relativity is no more incompatible with Reality than are Time and Space.* Relation, and Time and Space, are all forms of cognition of so fundamental a character as to lay valid claim to have their ground in the very nature of reality. And "to be in time" is no more mysterious for the entire World of Reality than it is for that little fragment of reality we call ourselves. For, strictly speaking, discussions about the "unendingness" of time, the possibility of conceiving of an absolute beginning in time, the "eternal now" of the divine Mind, etc., have nothing to do either with the nature or with the validity of this category. Everybody knows perfectly well what it is for the Self to be "in time," and equally well for the entire World of Being to be in time, quite irrespective of any negative or positive position in answer to these mooted questions. Undoubtedly, it has been the frequent practice of metaphysics and of theology to juggle with the time-concept, whenever the proposal is made to extend its application to the Infinite,

the Absolute, etc. But the lesson to be drawn from both the successes and the failures of all these dialectical efforts is not at all that which is consecrated by the Kantian "Critique." Their legitimate result is not the affirmation of the transcendental ideality, or the negation of the trans-subjective reality of the time-concept. It may very well enough be a lesson as to the impossibility of conceiving of the Infinite (or the Absolute) by a process of prolonging in time, or of heaping up in the "now" of a single grasp of consciousness, a monstrous number of otherwise disparate mental images. But such discussions have no bearing upon the nature and validity of the time-concept.

It will be of some help, however, in promoting a general theory of this category, to consider briefly certain difficulties — such as those mentioned above — into which the mind is plunged by a metaphysics that disregards the facts of cognitive experience and deals chiefly with abstractions. For example, the conception of "infinite" — meaning by this, unending — time, is, so far as such a conception has any bearing on a theory of reality, intelligible both as a positive and a negative conception. That is to say, it is positively a conception corresponding perfectly to the conception of any particular finite time; any portion of infinite time is measurable and comparable with other times, is perpetually divisible into present, past, and future, and is capable of being "filled" with events occurring in a series and enduring through a longer or shorter amount of time. These are the "marks" which the mind necessarily employs in its effort to frame even the most empty and abstract picture of time. In the actual constructive processes which are responsible for this picture, we are conscious of ourselves passing through a certain series of states that are representative of the processes which would go on in this infinite extension of the world's time. Thus this "world's time" is, both subjectively and trans-subjectively considered, no whit altered in its make-up,

because the mind is trying to conceive of it as unending. But the qualification of being *infinite*, or unending, is representable only in negative fashion. Infinite and unending time is *not* to be thought of as measured or definitely compared, for quantity, with any of the particular times of our experience with realities: its present is, indeed, always the movable and content-full "now" which forms the mind's only possible conception of present time; but its past and its future are *not* to be conceived of as finished; and, although not a moment of it can be imagined as unfilled with the being of the World, it is *not* to be imagined as ever all filled by a possible multiplication in the extension, time-wise, of the world's transactions. In a word, *quoad* time, infinite or unending time is, positively considered, just like any other time; but its infiniteness or unendingness negates every effort of the mind to conceive it as limited or ended. The conception answering to the noun is positive; the conception which aims to answer the adjective results only in negation. But this is equally true of every combination which can be made between all manner of nouns and adjectives like the adjectives "*in*finite" and "*un*ending."

Not more serious are objections against the trans-subjective application of the time-concept which take the form of maintaining the impossibility of conceiving an absolute beginning in time. Even the argument of the profound Kant in his "First Conflict of the Transcendental Ideas" scarcely deserves to be considered as a serious objection.[1] "In an empty time," says this philosopher, "it is impossible that any thing should take its beginning, because of such a time no part possesses any condition as to existence rather than non-existence, which condition could distinguish that part from any other (whether produced by itself or through another

[1] See the "Critique of Pure Reason," Müller's translation, p. 345, and compare remarks on this "Antinomy" in Adickes, and in the author's "Philosophy of Knowledge," pp. 412 f.

cause). Hence, though many a series of things may take its beginning in the world, the world itself can have no beginning, and in reference to time past is infinite." Now this argument, so far as it has any cogency whatever, tends only to show the impossibility of mentally picturing an "absolute beginning" of the entire complex of world-happenings — an ∞_2, which has been preceded by no ∞_1, with which it may be compared as sequent in time and dependent upon it as upon its Ground. That "*in* the world" many series of happenings may take their rise, Kant is careful to admit; for the denial of this would involve the denial of the *a priori* nature of the time-concept. All such beginnings, however, are relative, both to the mind of the knower and also to one another in the unending world-process.

But, in fact, the limitation of our ability to conceive of a world as springing into being at any instant, which instant could then be marked off as the absolute "beginning of time," is twofold in character. And the Kantian statement of this alleged antinomy, confuses the two and misapplies both. For by the very term "World" must be understood a time-series of events, already inaugurated according to some definite ideas of form and order and final purposes, — an actual system of beings already interacting in time. Certainly such a system cannot be conceived of as really springing out of nothing. As an idea or series of mental representations, it is the product of man's active imagination and intellect functioning in time. And as actual, it must be regarded as the product of some cause or system of causes, in order that it may originate at all. Granted the hypothesis of such a cause — we will say, for the sake of the argument, of the will and reason of God the Creator — and the category of time, *as such*, opposes no objection whatever to the world's time-series having an actual beginning. On the other hand, if I may think of the beginning of the world as a "moment" in the Life of the Everlasting World-Ground,

then there is no longer any insuperable objection to my conceiving of this world as having a beginning "in time." For now, the time in which the world's time begins is some particular time in the Life of that World-Ground, whom faith knows as God the Creator. Permission thus to think of the world and of the World-Ground can neither be given nor denied in the name of the category of time alone. But the whole problem as to a "beginning in time" is raised to be considered anew, upon far higher and obscurer grounds. Let it be remembered, however, that in this way the trans-subjective reality of the category of time is not in the least degree impaired or altered; but the point of its application is transferred from a world-process that is conceived of as beginning in time to the life of a Self that is, indeed, in time, without having any beginning in time. In this way both the confidence with which the time-concept is satisfied, and the inability to make this concept wholly void, may be regarded as affording proof for the metaphysical position we are defending. In other words, if I regard the world's time as a *mere series* of happenings in things, I may picture to myself the beginning of this series in time. But if I regard *the nature* of the ultimate World-Ground, I find that It cannot be conceived of as having a beginning in time. In neither case, however, can the trans-subjective application of the time-concept be voided. And this double fact, which is a fact both of positive conviction and also of impotency, requires the view that Time is a necessary form of Reality.

It is scarcely worth while to dwell long over that mysticism of theology which thinks to exalt man's conceptions or minister to his practical religious needs by speaking of the divine consciousness as an "eternal now." Understood as a legitimate but figurative representation, it is, so far as the character of the time-concept is concerned, just as true of man as it is of God. With every time-consciousness it is, of course, always *now*. This is the truth — already referred to — which

Lotze and others have rather unhappily expressed by speaking of the present time as alone having reality; for the past has been, the future will be; and neither past nor future truly *is*. But when the attempt is made to understand this phrase as a denial that the Being of God is "in time," with a view to save the Absolute from the limitations of time, then such a compound phrase as the "eternal now" represents one of the cheapest and most ineffectual forms of mysticism. No metaphysical theory can afford to disregard the claims of mysticism; but what we object to is a mysticism that contents itself with compounding phrases out of irreconcilable and contradictory elements. Let the truth be acknowledged frankly: If God does not exist in time, then man can never know Him, — that He is, nor what He is, nor anything about Him. Nor can any effort of intellect or imagination make "existence in time" mean anything essentially different, *quoad time*, for God, from what it means for man. But, here again, the question whether existence in time is conceivable for a being that is entitled to be called "Absolute" enlarges our theoretical difficulties and lifts them all upon decidedly higher and broader grounds. For the critical survey and mastery of these grounds, we do not in the least smooth our path by introducing a vague mysticism into the discussion of the category of time.

And now the way has been opened to that provisional answer to the problem of this chapter which will, we believe, best serve a harmonious and satisfying system of metaphysics. The problem, it will be remembered is this: The "being in time," which we and all other selves and all things have, cannot itself be wholly due to the constitution of the individual's time-consciousness. This time-consciousness, although relative to each individual mind's peculiar constitution and development, is also, in all its essential characteristics, common to all human minds. Otherwise no human life or human development, no science, or social intercourse, or moral character,

could exist. Moreover, the very nature of knowledge forbids that the ground of this common human time-consciousness should be found wholly in the subjective structure of the race. The world of non-human things, not only is known as in time, but it actually is in time; that is to say, a trans-subjective series of happenings — infinite in content at every moment of time — is presupposed in all man's cognitive experience. Our individual times, and the times of the race, are included in the world's time. And that very principle of relativity, which is often urged in favor of the pure subjectivity of time, is itself an indisputable evidence of its trans-subjective applicability. The system of reality actually is a time-series which, although its content at each "now" of its existence, may be symbolized by ∞, must, as a series, be symbolized by such an objective arrangement of its content as ∞_1, ∞_2, ∞_3, etc., — through unending time (∞_n). Or, if we feel impelled, for valid reasons, to distinguish between that all-inclusive system of reality we call the "world," and the so-called "World-Ground," we can only substitute a similar form of conception for the unending Life of this World-Ground. God's Being then becomes an unending time-series, every "now" of which is infinitely rich in content. But all this brings again before us the final question which arises in the discussion of this metaphysical problem: *What sort of a Being must the World have in order that it may satisfy the conditions imposed upon it by this category of Time?*

There are two important but subordinate classes of questions which are customarily employed to complicate the answer given to the metaphysical problem just proposed. These questions concern, first, the propriety of any distinction between the world, as a total system of realities, and the World-Ground; and further, the manner in which this distinction is to be made (*natura naturata* and *natura naturans*; the world and God, etc.). The second class of questions concerns itself with the relations in which the two beings thus

distinguished must be supposed to stand to each other (Creator and created; The One and its multiform "differentiations"; God and the world as his "manifestation" or "revelation"). Now we wish for the present as much as possible without prejudicing a future consideration of such questions to put them all on one side. Whether we distinguish, as belonging to one sphere of reality, between God and the world, or distinguish them not, and however we picture the relation between the two spheres distinguished, our present problem is unchanged. What nature must Reality have in accordance with the inescapable conditions of human time-consciousness? To this question only one answer seems possible, or even intelligible: The nature of reality must be that of an absolute Self. Really to be "in time" is to exist as a Self knows itself to exist. Really to be in the all-inclusive world's time is to be an infinite and absolute Life like that, *time-wise*, which every self knows itself to be. Only with this hypothesis can those two aspects of the time problem which are ever before the metaphysician be treated in a reconciling way. These are the reality of time as a constitutional form of the functioning of the knower, of the cognitive self; and the reality of time as a trans-subjective series inclusive of all events, both of those in the consciousness of the knower and of those in the world of external things. These two aspects — the subjective and the trans-subjective — are completely reconciled only by that theory of reality which regards all concrete existences as having their time-series in the unending Life of a Self. No other theory, therefore, unites the subjective series and the, to us, trans-subjective series, in the Unity of one World existent in time.

To accept that mechanical and external view which regards the happenings of so-called nature as stamping themselves "time-wise," in a blurred fashion, upon the sensitive paper of the human mind, is to contradict all the testimony of psychology, and to subvert all the analysis of philosophy, with

respect to the genesis and development of man's consciousness of time. *Such* realism is shattered into fragments by a few sturdy blows from the critical student of this category. But to regard the genesis and development of time-consciousness as purely subjective, as an affair of the constitution and activity of the human mind alone, is to render knowledge impossible, and to separate man from the world of things. It is to render science a dream constructed out of a possible series of imaginary happenings rather than a progressive study of the truth of the world's history. *Such* idealism is evaporated by the heat of our fierce workaday sun, and by the added heat of its own friction with the ethical and religious interests of life.

In illustration and further proof of the view we are advocating let it be considered what the mind is doing when it pictures the events of the whole world of beings as actually happening in one and the same time-series. The mind is doing simply this: it is trying to take the interior point of view held by the world's time-consciousness. But what really is this point of view? It is the point of view which would be held by the mind, if its limited grasp of consciousness were only adequate to include all the happenings that go on in the world's time. It is the point of view of a being that has a time-consciousness like our own, yet infinitely greater and profounder in its grasp. This is what *would be seen* from its point of view, *if* all these happenings were brought within the grasp of an infinite and all-inclusive consciousness. The "now" that is, the "then-that-was," and the "then-which-will-be," have no reality, and never can get any reality, as applied to the entire system of happenings, unless some conscious Self be conceived of as functioning under the category of time. Our conception of absolute and universal time is man's best, yet feeble and inadequate representation of the Divine time-consciousness.

In vain does the mind strive to rid itself of the demand to conceive of the existence of the world in time, under the form

of a Life of other conscious Mind, functioning after the analogy of its own life. The student of biological evolution draws an enticing picture of a vast and indefinitely extended world-process which antedated the existence of any form of sentient life. He aims to tell you what was "*then*" so many myriads of millions of years ago. But surely this little stream of consciousness does not claim to contain all this as content of memory. The biologist is only making a fairly plausible but wofully fragmentary picture of what there was then to know, if some knower had been upon the scene. His finite act of imagination in the "now" of his little consciousness, gives the needed unity of an imagined past time to the imagined elements. But what was necessary in order to make really existent "*in time*" the world that "then" was? For time is no force, external to things or immanent in things, which binds them into a unity. Only a conscious self, now existent, can create the actual "now" which brings many things into the unity of one time. Only a conscious Self, then existent, could have done the same service for things at any moment of that past time. That which we do so fitfully and imperfectly for a fragment of the world's events, the World must somehow do perfectly and constantly for itself, if it is going to be known as existent "now" in time. And what is true of the ever-changing present, is true of the past, and of the future, of the world's stream of events. We can conceive of them as in time now past, only as we imagine them to be remembered by some possible mind. Time past, actual and not imaginary, is representable by us only in terms of memory. All these happenings in the world, which neither we nor other men have known or can know, are conceived of as possible objects of memory for the Absolute Self. The only reality which the world's past time can have must be found in the truth that the World somehow remembers itself.

But it is not hard to conjecture what thoughts are passing

through the minds of readers unwilling to agree with our reconciling theory. You are talking, say they, about the characteristics of that time in which the world's events must be *known*, if known at all; you are forgetting that metaphysics deals only with reality, and that the metaphysics of time discusses the question, What is it *actually to be* in time? Why may not much, nay almost all, of the world's happenings never have been known; and yet they may have happened all the same; and that "in time"? To be known in time, and really "to be in time," are surely not one and the same thing. But here again is that foolish and inconsiderate kind of realism which forgets that every form of time — present, past, and future — is actually a form of conscious mental life; and that without such mental life, all the words and concepts employed to describe time-consciousness are absolutely devoid of meaning. If one does not *mean* anything conceivable when one speaks of "time" as actually applicable to the world of realities, one might as well inquire what it is to be really "in abracadabra" as really to be "in time."

Notice, then, that all the phrases which popular usage, or scientific theory, or transcendental metaphysics employs virtually consider objective time after the analogy of the life of a Self. By them all, time is regarded as somehow real; and yet not as a real thing. It is vaguely thought of as a "medium" of things; but the actuality of it as a "medium" is conceivable only as an actual succession of conscious states. To bring into existence the "now," that is for me, I must grasp together into the unity of consciousness, the otherwise disparate "momenta" of my own life; then I actually am "now," and my object has an actual present existence for me. The same thing is true of the "now" that is for you. How a universal "now" can come into existence, an absolute time that gives the time-consciousness to all finite selves according to the relations in which they, respectively, stand to it, — this is a problem which admits of no other solution than the one

we have proposed; such a "now" must be the construct of the active consciousness of an Absolute Self. And the complete application of this category to all the conceivable objects that make up the present complex of the world's being can be secured only if the grasp of this time-consciousness includes all these objects within itself. Differently expressed, it may be said: The world's absolute and universal time is the actual succession of states in the all-comprehending Life of God. If, then, one is willing to substitute for the mathematical symbol of ∞, the conception of the Life of an Absolute Self, one may validate both the popular and the scientific assumption of an absolute time in which all the events of the world are ever taking place. This conception is that of a series which must be conceived of time-wise and yet involves the denial of a beginning or end to itself; a series that, from every now, or ∞_1, reaches both backward and forward to ∞_n. *The transcendental reality of time is the all-comprehending Life of an Absolute Self.*

As to objections which arise against the conception of an Absolute Self or against the possibility of conceiving of an absolute Being as existing "in time," this is not the place for a detailed consideration. It is, indeed, well to respect the hesitation of Augustine, who says: "What then is Time? If no one asks me, I know; if I wish to explain it to one that asketh, I know not;" and the modesty of Professor Sidgwick's declaration: "The relation of the Absolute to time is one of the things I do not understand." But if we not only accept Mr. Hodgson's escape from a paradox which is only apparent to the refuge offered by the conception of an infinite intelligence; but also carry our critical analysis to a point where we obtain insight into the ideal and yet transsubjective nature of time-consciousness, then we may discover that the contradictions and antinomies, customarily alleged, do not exist at all. *Our* time-consciousness is, indeed, limited; its present grasp, its recall of memory, and

its anticipatory seizures of the future, are all feeble and defective enough. But "really to be in time" is not *per se* to be finite and limited. And surely the conception symbolized by a simple ∞ is no grander or more absolute than that symbolized by a series, ∞_1, ∞_2, ∞_3, . . . ∞_n. Just as surely is all human thought about Reality made grander and more worthy to stand, when for this symbol, ∞, there is substituted the conception of the Life of an Absolute Self. At any rate, only this conception seems able to validate the category of time in that trans-subjective and universal application of it which the development of human knowledge presupposes, demands, and perpetually confirms.

CHAPTER IX

SPACE AND MOTION

THE philosopher Schopenhauer emphasizes the necessity of Space as a principle of differentiation (*principium individuationis*) which rules over all the objects of man's sensuous perception. Human experience through the senses is not, indeed, to be trusted as giving the truth of reality, the intuition of the Thing-in-itself; but its space-form is universal and unquestioned as the work of intellect within the sphere of phenomena. Or, to use the Kantian expression, all "phenomenal realities" are cognizable only as they fall under this universal principle of differentiation. Now, since a critical metaphysics can maintain neither the crudely realistic nor the unqualifiedly subjective views of the origin and the applicability of our space-concepts, some satisfactory mode of reconciling the truth of both these views must be sought. And we discover a certain clue which it seems desirable to follow with the search-light of reflective philosophy while considering space as such a universal and fundamental principle of differentiation. If it were permissible at once to express the thought in a tentative way, it would seem that the following claim might be made: It is only when space is operative as an active and controlling principle both subjective and trans-subjective that "*the* other," and many "others," existing in the unity of a System of Reality, can be known or even rendered conceivable to man.

Now undoubtedly the temptation to consider space as something far different from an *active* principle of any sort

is very great. The temptation is even essentially connected with, and strongly fostered by, the very experience out of which emerge all our workaday conceptions of spatial qualities and spatial relations. The nature of this experience makes it much more difficult for the unreflecting mind to recognize the truth that space is not an entity, or a purely passive and formal principle of things, than is the case with the twin category of time. For the impressive feature of our time-consciousness, on the one hand, is the immediate awareness of change in the content of experience. Therefore time itself is figuratively said to move, to flee, to be "on the wing." And our own whole Self is describable, from its time-wise point of view, as a "*stream* of consciousness." So closely connected is the time-concept with the experience of change that we need considerable reflection even to correct the meaning for reality of these figures of speech enough to substitute for them the more appropriate figures of speech. It is really we ourselves, and the things we know, that are changing "in time" — as though time itself were for us, and for things, some sort of an unchanging medium. But, on the contrary, with space we are only the more confirmed, the more we reflect, in the figurative view that *it* does not move or change; space plainly *appears* to every mind as a motionless, unchanging, and therefore internally inactive "medium," in which things are set. We and other things move "in space." But no changes of position, or of size, or of shape, which things may undergo *in* this medium, have any effect upon space itself; neither has the space, in which they are set, any power to effect changes in things. There it is — enveloping and surrounding man and all other beings, as a sort of medium of existence, to be sure, homogeneous, yet without possessing any of the qualifications which he and things possess; except that it is infinitely extended in three dimensions, as all things are extended in three dimensions to a limited extent.

Of course, no prolonged attempt at reflection is needed in order to convince the mind that all such modes of speaking are figurative and unfit to reveal the final truths as to the real nature of the category of Space. Yet the very tenacity with which these figures of speech are employed, and the difficulty with which they are interpreted into a satisfactory theory of reality, are significant facts in the history of metaphysical speculation.

There is no other so-called category which has been so much discussed, with so little net result, as the category of space. Here the practical implications and the theoretical conclusions seem to be brought into the sharpest contrast, if not into obvious contradiction. In popular uses, space is the most objective and realistic of all human conceptions; yet it has been most commonly resolved by ontological systems into a purely subjective form, a mere idea of the image-making faculty. Space is the necessary presupposition of all ethical and social intercourse between men; yet it has been most often declared to be totally irrelevant to the reality of the Self. The cheapest forms of unanalytic, common-sense realism have taken this conception for granted, as a kind of copying off, by the mind, of something actually existent; but the most subtle and acutely analytic forms of psychological idealism have been as yet unable to trace satisfactorily its mental genesis and development. Space, considered as "appearance," seems visible and tangible, as time is not; but in answer to the question, What then really is space? one can only fall back on mysteries that lie much more remote from human powers of envisagement than does the mystery of time. And for this same reason, while one may venture to form a definite mental picture of what it is for God to exist in time, one hesitates even to raise the similar question in one's reflection over the nature of the space-concept. Thus it comes about that that which men are inclined at first to believe is really an object of immediate

and indubitable experience, and which is undoubtedly the necessary presupposition of all their grossest, most material experiences, has somehow the thinnest and most evanescent roots in the depths of Absolute Being. Ask me what Time is, and I can respond; "Look to yourself and see; for that which your conscious life is will give to you the envisagement of a real being in time." But ask me what Space is, and I can only say: "It is the form in which the show of things takes place; but what it really is, I cannot say in terms which admit of direct envisagement by self-conscious experience."

It has already been suggested, however, that the clue to a method of harmonizing the valid claims of the realistic and the subjective views of the category of space may be discovered by considering space as a principle of differentiation. Without space, "otherness" could not be, nor any multiplicity of thing-existences in the unity of one World. [Let not the reader be offended by an uncouthness of terms which may help to make a profound and difficult truth somewhat more comprehensible.] In this our common world of sensuous experience, *here* am I, and *there* are You; and near by here, or over there, are myriads and myriads of other selves and things. But to me here, — wherever I may be, — you there, — wherever you may be, — are always a thing; and I am always, of necessity, known to you, in the same way, as a thing external to you. All those "other" beings, which are really *other* than both of us, and yet are, for both of us, really the same, become known in the same way. It is space which makes possible this infinite differentiation (or "externalizing" of each to every "other") of real beings, all existing in the unity of one World. Thus is made actual a system of beings that are external to one another and yet are related in a form of ideal Unity; this function must be assigned to Space whatever view be taken as to the genesis, development, and validity, of our space-perceptions and space-concept.

The general conception of Space as a principle of differentiation — whether purely subjective or also trans-subjective — admits of illustration in two directions. First: without space-form we cannot distinguish the Self from the not-self, or from "the other" than self, as being external to the self. Space is not, indeed, the only form under which this so fundamental distinction takes place; but it is one of the several most essential or categorical of such forms. I am unable to identify myself with you, because neither the time-form nor the content of the two streams of consciousness coincides. Your time-form is not my time-form; and our separate times do not constitute one continuous and connected stream of consciousness. Moreover, the content of the two streams is markedly differentiated, for each one of us, by the distinction between self-consciousness and thing-consciousness. But this essential differentiation is itself accomplished only under the category of space. This statement can be verified as a psychological fact by showing how the consciousness of self and the knowledge of a world of things grow together in every human mind, in a sort of reciprocal dependence. Only as these two beings — namely, I that perceive or think about the thing, and the Thing which I perceive or think about — become more definitely set off from each other can the knowledge of either be developed. But this very process of "externalizing" is always an instance under the general principle of space-form. Or to state the truth of cognitive experience in a somewhat more abstract and metaphysical way: Consciousness of Self and World-consciousness develop together in a sort of reciprocal dependence; and this reciprocal dependence is essentially connected with the progressive recognition of that category which makes the world "other than," or "external to," the self. We say "other than" *or* "external to;" — for although there are, so to speak, other ways in which, and relations by which, each man distinguishes his self here

and that world there, yet the way that looks "space-wise," and the spatial relation of "externality," is essential to the distinction. Every object-thing, whatever else in qualities or relations or activities it may be or may accomplish, is always given as external to the Self.

It is universally admitted, both as viewed from the point taken by the most naïve realism and also from that held by the advocate of the doctrine of the transcendental ideality of space, that "things" are to be known only as external and extended. This necessity which attaches itself to all human cognition of things, the realism of the totally unreflecting mind considers to be explained by the affirmation that things-in-themselves, or things totally independent of mind, *are* actually external and extended. From this unreflecting point of view our mental representations of things as in space are a kind of copying-off process, dependent for its validity upon the extra-mental existence of beings resembling — space-wise — the system of mental representations. But the Kantian doctrine accounts for this necessity by referring it wholly to the mental constitution; although Kant himself is repeatedly caught in an explicit or concealed reference to some kind of a trans-subjective cause of this form of mental representation. Both extremes of view agree that all things known by man, whether perceived or only imagined, must be known "*in* Space." Both, however, either vacillate or deny, when the question is raised as to the applicability of the space-concept to the Self. It is rather customary to deny that the mind, or soul, or *Ego*, exists in space; — or, at any rate, it is held that we do not, all of us (that is, both body and mind), come under the necessity of submission to space-form, as all things manifestly do.

Every form of the negative position toward the applicability of the space-concept to the Self demands something more than an unreflecting assent. It is necessary to ask,

What is meant when I am told: — "To be sure, you know all things, including me and other human beings, only under the form of space; but you, yourself, are not known to yourself as existing 'in space.'" Let us take this appeal for a meaning to the actual facts of our common experience. If, now, by the word "self" is understood what not only the child but also every adult understands for all practical purposes, it is certainly *not* true that I do not know myself to exist in space. For the essential thing in every popular conception of the Self is just this, that when one is asked a question as to one's whereabouts, one can lay one's hand on one's heart, or one's head, and respond: "*Here* am I." Indeed, this "Here-am-I" is so essential a part of the answer which we feel ourselves compelled to give, even when we are asked to define our most essential nature, that no man can easily refrain from bringing it to the very front in evidence. In moments when living is full of some special form of emotion or of action, it is most emphatically true that experience compels every man to emphasize, in his conception of the self, some particular part of his bodily organism. The connection between the *Ego* and this particular part of the organism is ordinarily expressed in one of two ways; either the local, or the instrumental. I know myself as either here, immanent and suffering or doing, *in* the organ; or I am just *outside* of the organ, and am using it as my instrument. I am suffering pain in my heart, or my heart is giving me pain; I am feeling the action in my moving arm, or I am acting upon something else with my arm. In either form of speech some kind of a relation which is covered under the general conception of Space is applied to the feeling, perceiving, and willing Self. In a general way, the differentiating and externalizing function of the category of space seems as truly implied in these as in any other of our cognitive experiences.

It is, of course, at once to be remembered that such facts

of knowledge as those just mentioned concern the psycho-physical self, — the man as a kind of two-sided unity, or as having a dual nature, both body and mind. To the *mind itself*, to the *pure Ego*, it is customary to affirm that spatial conceptions are in no respects applicable. And into what absurdities and foolish contradictions our thinking is plunged by the attempt to apply, in detail, conceptions of spatial qualities and spatial relations to minds, there is scarcely need to mention. Every thing, for example, is not only "out of" every other, but the distance at which it is out, or the distance between the two things, is measurable or calculable as so much, and no more. Even for the atom, the phenomena of isomerism of position seem to make necessary all the spatial qualifications of larger things. But how far is the *Ego* from the organ when, for example, the nerve-tract connecting that particular organ with the sensory-motor centres of the brain has been severed? Nor do we escape the perplexity and the contradictions if, while admitting that extension in space is inapplicable to minds, the attempt is made to vindicate for them position in space. It is a certain vacillation upon this matter which is one of the causes that makes Lotze's view of the nature and applicability of this category confusing.[1] But how avoid vacillation, and yet make clear the meaning of "the localization of cerebral function," or connect, in whatever terms, the stream of consciousness as a whole with the molecular constitution and physico-chemical behavior of the brain? But, on the other hand, shall we be forced into the absurdities of a "figurate conception" (to borrow Hegel's somewhat scornful phrase) which virtually regards the faculties in particular, or the *Ego* in general, as moving about from brain-centre to brain-centre, after the fashion of birds hopping from twig to twig in the top of some tree?

[1] See his "Metaphysic," Book II., chapter i.: "Of the Subjectivity of our Perception of Space" — a chapter which seems to us the most severe and suggestive criticism of this category which has ever been written.

It is, to a certain large extent, such difficulties as the foregoing which drive some students of metaphysics to the extremes of subjectivism in their treatment of the category of Space. It is owing to the excessive fear, at least in part, of such forms of "figurate conception" that a writer like Paulsen feels himself justified in ruthlessly forcing a path through the thickets of a sceptical epistemology, and then upward to the cold and barren heights of a mystical Idealism. Scant comfort is it to the mind which insists upon thinking out its bearings clearly, that, when alone on those heights, it may indulge an emotional faith in maintaining still some kind of a relation to some kind of a Reality. Physics and psychology, indeed, combine to furnish their warrant to Paulsen[1] when he declares that idealism, from Plato to Berkeley, concludes: "The spatial world cannot be the absolute reality; extension and divisibility are not compatible with absolute reality." Experience may also warrant him in affirming: "We may imagine beings whose sense-organs and percepts are different from ours, and who therefore have different forms of arranging the elements." But to say, "We can imagine an intellect for which neither the 'before' and 'after,' nor the 'outside' and 'by the side of,' have any meaning,"[2] comes perilously near upsetting the very subjectivism — and that in its most tenable form — which it is the design of all such declarations to establish. For, on the contrary, *my* imagination and *my* intellect must represent all its objects *with* a meaning for "before" and "after," and for "outside" and "by the side of." "*Ausser-einander und nebeneinander setze ich meine Gegenstände.*" But when still later[3] Paulsen plumply declares that "Space, Time, and the Categories, are as much products of evolution as are eyes, ears, and brains," he has destroyed all possibility, for himself and for every other thinker, of pursuing in a legitimate and fruitful way the very business of systematic

[1] Introduction to Philosophy, p. 348. [2] Ibid., p. 350. [3] Ibid., p. 413.

metaphysics. The essential and unchanging forms of cognition have been reduced to the rank of being the (must we not say, fortuitous) offspring of a thought so complex, so vague and shifty, as yet so full of internal contradictions and so much the child of the *Zeitgeist*, that it can itself ill claim title to be called one of the latest born of the categories. What is there about this word "evolution" which makes it so mighty as to down all the other conceptions of the human understanding? And when the waters of experience in which our growing powers are bathed become somewhat murky, why proceed at once to pour out the living child of reality, "with the bath"?

We note, however, that two assumptions, which are by no means self-evident, strengthen those difficulties of imagination upon which a sceptical subjectivism chiefly relies in its treatment of the category of space. These are, first, the assumption that what is essential about the space-concept as a form of mental representation is to have things presented to perception as a sort of smooth, continuous extension; and, second, the further assumption that the relation between this form of mental representation itself and the "absolute reality" can be properly conceived of only as a certain copying-off process. Now neither of these two assumptions is true; and we shall soon show that they are not true, by pointing out positively, and with some detail, what are the facts of cognition, and its trustworthy assumptions. Let it be noticed now, however, that if space be expounded as some sort of an active differentiating principle — both subjective and trans-subjective, both a form of mental life and a form of that Reality which manifests itself, in all knowledge, to man — then many of the customary difficulties vanish. Moreover, the essential nature and, if we may so speak, the moral and spiritual value of the category of Space, then reveal themselves. For — to return to the point of standing from which the discussions proceeded — space certainly has this

function of differentiation in the genesis and growth of human knowledge. It has also all the supreme value which such a function implies. Considered as exercising this function, it does really get application to the entire life of every self or self-like being.

Undoubtedly we may, if we choose, regard the Self as pretty purely a mental activity. It is *I* that think and feel and will.[1] Regarded as the subject of these activities, as activities *merely*, I am not to be spoken of as external to the activities; nor are the objects — whether they are states of myself or "thing-objects" — to be spoken of as external to me. Even much less am I or they spread out, over so many square feet or cubic metres of space. But considered thus *merely* (that is, as pure unrelated reality of thinking, feeling, and willing subject) I am not a Self actually existent among other selves and things, in the unity of one World. And it is impossible to conceive of my standing in manifold relations to beings "other" than myself without the introduction of some principle of differentiation which shall render them external rather than interior to me, as are my own conscious states regarded as mere states.

In insisting upon this function of space in the form of "externalizing" "the other" for every conscious Self, we are not making anew the old and vain attempt to devise a deduction of this category. It is not our point of contention simply that the human mind is unable to do without *some* principle of differentiation; and that by chance, as it were, nature, in its manifold processes of evolution, has hit upon this particular principle. Neither is it intended to smuggle in an explanation only apparent, of the category under an ambiguous use of the word "external." The space-concept must be received as one of the categories; and, neither disregarding the use of figurative terms for express-

[1] In this connection see chapters iii. and iv. in the author's "Philosophy of Mind."

ing this concept, nor insisting upon giving to these terms a literal but foolish interpretation, will help us to discover the essential service in all human knowledge which this category performs. But is not this the most striking thing about this service: It is under space-form that all other selves and all other things are differentiated, for each self, from itself? And to the extent of making such a differentiation actual, the category of Space applies also to the Self. When I know any other than myself, as *an* "other," then I set that other out of me, as in a system of beings, all united in one Space.

The essential nature of that function of differentiation which is performed by the space-concept for all man's knowledge of things — their qualities, changes, and relations — is too obvious to need more than a brief mention. Every particular being, in order even to be known as a "Thing," must possess either perceived or imagined spatial qualities. This becomes true of every element, or part, of each thing, just so soon as our experience or our theoretical interests have determined how we will choose to resolve it into its elements, or parts. For example, the tree over there is external not only to me, but also to other trees which are in the same neighborhood, and it has a certain extension — "*in* space." But its different parts, however I choose to construct them by processes of mental discrimination, — top and bottom, right-hand side and left-hand side, or trunk, branches, twigs, leaves, and buds, — are all external to one another, and each has its own extension in space. And if its parts are still further differentiated by analyzing it into their minutest tangible or visible elements, the same thing remains true of these elements. Even when imagination transcends the limits of the visible and the tangible, — no matter how much these limits are first extended by instrumental methods, — each element must be conceived of as differentiated space-wise from every other. Those

mathematical points, which a certain theory of the constitution of matter strives to regard as immaterial centres of force, must be conceived of, and described, as here and there, set side by side, or so far distant from each other, etc. Positive void of extension cannot be imagined without invoking the differentiating function of the category of Space.

Now the more obvious and fundamental, if not all the possible changes in things, consist of different directions and velocities of the whole mass, or of the parts, or of the elements, of those things. Actual motion is the great and the universal fact in the being and the life of every physical thing. Possibility of movement is the undoubted factor in all our conceptions of what things can do. What can the world of physical beings do? It can move; and it does move. Movement is the form of change which all such beings share in common. Without stopping to examine the ingenious attempts of philosophy, like that of Trendelenburg[1] for example, to make "motion" the sole universal category, or "vehicle" of all the categories, we cannot refuse to speculate upon the significance, for the nature of reality, of such permanent and universal facts of man's experience with things. "He who knows not motion," said Aristotle, "knows not Nature." But even the customary and unsatisfactory definition of motion as "a change of place" emphasizes the differentiation effected in the world of things by the principle called Space. There are indefinitely many places, actual and conceivable, in which things may be; and the change of things from one to another of those places can only be accomplished on condition that the *places* shall somehow be kept separate while the *things* remain the same. This introduces to our thought the effective and separating nature

[1] See his "Logische Untersuchungen," the entire Band I.: "Weil die Bewegung eine in sich einfache Thätigkeit ist, die sich nur erzeugen, nicht zerlegen lässt, wird sie zugleich die letzte sein, die aus keiner andern stammt, und wird darum auch aus sich erkannt werden; weil sie die letzte ist, wird sie allgemein sein und jeder Thätigkeit zum Grunde liegen," etc.

of space. The differentiating function of this category must be invoked in order to understand our experience with both the interior and the external movements of things.

Among the many objective relations, which things may sustain to one another, such as those of kinship and difference in qualities, or of descent in the same or in divergent lines of generation, the relations of position and motion in space are ever most conspicuous and most important. Without knowledge of such relations science cannot arrange things into species and genera, or trace their descent from one another, or their distribution over the face of the earth. And as for astronomy, mechanics, and physics, — not to mention so-called pure mathematics, — the sciences which go by these names are little else than systems of abstractions statable only in terms that employ constantly the differentiating function of the category of space. How all quantity and measurement, and all number and ideas of unity or of manifoldness, are dependently related to this same principle will appear in the proper connections.

Thus far Space has been spoken of as though it were an active principle that accomplishes something necessary to any knowledge either of Self or of Things, as existing together in a unitary system. *Space, that is, has been spoken of as though it were an agent.* And yet the discussion began by calling attention to that persistent "figurate conception" of this category, which both the popular and the scientific consciousness employs, and which regards it as some kind of an inactive entity, or a pure stationary form or framework for the setting of things. Now, it was just the insufficiency of this latter view, when taken on its own grounds, which we desired to show. Whatever else space is, or is not, it must somehow perform its function of differentiation for us and for the things which we know. For this is the essential truth of fact in all human knowledge, so far as knowledge falls under this so-called category. All that

is "other" in man's known world, is external to each man's self; all things are, and change, and stand related (*one and others*), only as they comply with the terms of this function of the space-concept. Even if a man considers his own body entirely, or any member of it, not excepting the brain, as belonging to the sphere of the *not*-self, still this differentiating function of the space-concept must be invoked.

But is space properly spoken of, *as though it were an active principle?* To this question scientific psychology gives no hesitating or equivocal answer. It demonstrates beyond doubt that, considered from the psychological point of view, space is most properly and precisely just that. Subjectively regarded, space, in fact, *is* the construct of an active and discriminating Self. Like all other constructs of this same agent, it begins in darkness and confusion, grows into clearness and precision of mental representation — differently for different individuals, and attains its highest development in that systematic doctrine of spatial qualities and spatial relations which the physical sciences so successfully employ. As for the so-called "space-concept," it is like every other form of a concept in respect of the mental faculties which it requires for its formation. As mere concept, it bears an abstract and formal character, and depends upon the comprehensiveness and degree of success which different individuals meet in their attempts to think out the meanings of their experience. But it is a "category"; because it is, at any rate, a necessary and universal form of the human mental representation of things. The world of things, and of selves as related to things, is known by all men to exist in space; and this world cannot be known to exist otherwise than as existent in space. Moreover, with the more correct and profound recognition of the meaning of this category, we deny the statement of Paulsen, that any world of different beings can even be imagined, or thought, as not coming under space-form.

In spite of the concentration of experimental, introspective, and theoretical effort upon the psychology of space, the subject remains in an incomplete and unsatisfactory condition. There is comparatively little difficulty in arriving at agreement concerning all the principal problems in the descriptive history of the time-consciousness. But with the problems in the genesis and development of space-consciousness the case is not so. Students of psychology are still striving to answer the poetical inquiry: —

> "Who can tell what a baby thinks ?
> . . . . . .
> What of the cradle-roof, that flies
> Forward and backward through the air ? "

And the constantly increasing throng of incompetent investigators only seems to emphasize the words of Diderot: "To prepare and question one born blind, would not have been unworthy of the combined talents of Newton, Descartes, Leibnitz, and Locke." Yet we cannot sympathize at all with the position taken by the majority of writers on the metaphysics of space, from Kant to Mr. Bradley,[1] the latter of whom declares: "We have nothing to do here with the psychological origin of the perception" (that is, of space). On the contrary, the study of the genesis and development of man's perception and conception of space is the only way to approach the important metaphysical problems involved. Although even the following brief account of the points made good, in our judgment, by modern psychology will contain certain opinions that other students will dispute, the agreement on which we can count is necessary and sufficient to establish and maintain our central metaphysical tenet.

The most primitive "stuff," from which space-consciousness takes its genesis, consists of certain obscure and com-

[1] Appearance and Reality, p. 35.

plex conscious modifications called "sensations of motion." Originally these are not perceptions of motion, or of things in motion; nor can they be regarded as set by the active mind into the framework of an already constructed space. On account, however, of the constitution of the psycho-physical organism and in accordance with its inherited functions, these complex sensations are of immense importance in the development of the Self, and of its knowledge of Things. The child comes, all alive — writhing, kicking, screaming — into a world that is also alive to its very core. These most primitive sensations of motion are thus both the products of self-initiated movements of the organism, and also of the passively received movements of things, as they change their relations to this organism and so stimulate it in manifold different ways. This primitive experience is full of pain and also of pleasure; it has both its risks and its rewards. Thus the modifications of sense-consciousness which the active self constantly undergoes by virtue of its necessary commerce with active things, become both the stimuli to its appropriate modes of action and the *indiciæ* of the changing relations in which things stand to the self. That is to say, sensations of motion serve as "local signs."

The image-making and discriminating consciousness must be invoked in order to give system, and a regulated value and orderly arrangement, to this primitive horde of sensation-processes. The contemporaneous existence of two or more groups of sensations in consciousness, even if they are of that peculiarly differentiated character which belongs to different sensation-complexes of motion, does not of itself necessitate the perception of space. This twofoldness will not alone warrant the mind either in placing the sensation-complexes "side by side," or in attributing them successively to the same object that has moved from one place to another. Psychology cannot, indeed, derive the *compulsion* to experience things in space from any amount of mere dif-

ferences in the content of simultaneous or successive sense-consciousnesses. It can in this way only account for the *clues* made use of by the mind in perfecting its experience under spatial form. Further explanation of the development of the space-consciousness requires two other assumptions. One of these involves the work of that same image-making and discriminating intellect to which reference has just been made. The other implies some native tendency or impulse, amounting to a compulsion to make just this peculiar kind of an arrangement of different "moments" of sense-consciousness. *In these two assumptions we recognize again the Self as a constructive and differentiating principle, which acts according to its own nature in its apprehension of a World of things.*

It is not necessary to follow further the history of the development of space-consciousness as studied from the subjective or purely psychological point of view. Apparently the statement of Teichmüller[1] is true: "Spatiality is, therefore, so far as experience goes, only an arrangement of touch and sight-sensations." But even if we accept the contention of those who, like James and Ward, hold that all sensations have a sort of vague primitive "bigness," we do not escape the necessity for believing in a process of "the integration or synthesis of these proximately elementary presentations which are called perceptions, intuitions, sensory-motor reactions, and the like." "Arrangement," in the one case, implies an active principle in the form of a mind; and not less so do the words "integration" and "synthesis." Nor is this view of the psychological genesis and development of space-consciousness changed as we watch the process which results in that wonderful diremption of the objective world into the Self and external Things. Although this process involves, according to Volkmann,[2] two

[1] Die wirkliche und die scheinbare Welt, p. 247 f.

[2] Lehrbuch der Psychologie, II. p. 136 (3d ed.).

constitutive marks, — namely, projection into an outside space and becoming conscious of dependency in having the sensation, — it involves no less the differentiating activity, space-wise, of the thinking, feeling, and willing mind. It is indeed, — to use the phrase of this author — "the determining of the other by the without;" but it is even more obviously a determining that the other shall be without, by act of that which knows itself as within.

Mere projection and arrangement of sensation-complexes into more stable combinations, under space-form, do not give us the cognition of a real thing. Every "Thing" is something much more than a mere spatial arrangement of the sensation-complexes, with "their escort of images," etc.; every *thing* has already been proved to be a concrete realization of all the categories. Subjectively regarded, however, every concrete reality receives the space-form which it comes to possess, through an active and attentive synthesis of the perceiving mind.

It is customary for those who regard space as a purely subjective principle to explain its universal application to the objects of our cognitive experience by considering it as a constitutional form of mental representation. Thus, to represent all things to themselves, as spatially extended and spatially related, belongs to the very nature of the mind of mankind. Space, like all the other categories, is *a priori*. But the character and the clearness of every individual's space-concepts, considered as abstractions and as capable of scientific application, may well enough be matters of an indefinite differentiation, in dependence on education, native talents, and even trivial circumstances. That the mental representation of things in space is, in some sort, *native* to all normal human minds, no one can doubt. But is this admission enough in itself to account for the universal and necessary objectivity of space — in the form in which the experience of man with things exhibits such objectivity as

universal and necessary? We do not by any means believe that it is.

For let our brief study of the so-called "objective validity" of the space-concept begin by trying to get clear ideas of what both ordinary and scientific knowledge demands of any attempt at explanation. That is indeed a cheap way of virtually dismissing the entire problem which concludes the *pure* subjectivity of the category of space from the subjective and relative character of the space-presentations of all men. *For it is just this universal applicability of our mental representations of space, though in a way to take an infinite number of relations into account, which itself needs to be accounted for.*

An analysis of the objective experience of man with space shows that the following particular truths are inextricably interwoven with all knowledge of things and of the self in relation to things. To deny these truths is to destroy the integrity of the very structure of human knowledge. First: the spatial perceptions and conceptions of different individuals vary in dependence upon changes in attention, imagination, degree of discrimination, etc.; they are, therefore, undoubtedly subjective, in the most solipsistic meaning of that word. Every individual has his peculiarities in respect of the space-form of mental representation. Second: Certain features of the spatial perceptions and conceptions of all men are alike, and the laws of the development of these perceptions and conceptions are the same for all men. In some undoubted meaning of the words, space-form is the universal and necessary form of the mental representation of things by man. Third: The changes in the spatial perceptions and conceptions of men are, indeed "relative;" but this very relativity itself demands an explanation that can be found only in actual changes of relations among the concrete realities of the world. Even the relativity of this form of mental representation implicates a trans-subjective

ground. Moreover, the differentiating function, so to speak, of this trans-subjective ground must be adequate to the task of accounting for the infinitely great variety which human spatial perceptions and conceptions actually display, in the development of the individual and of the race. For, fourth: Motion is a most undoubted and universal fact in all man's experience with things. It is by the continuous realization of this fact, under a great variety of forms and laws, that all physical evolution takes place. Every form of physical science either resolves itself into formulas expressive of this fact, or else it is rendered dream-like and ghostly by the denial of the trans-subjective reality of this fact.

It follows, then, — to state the conclusion in technical language, — that neither the solipsistic theory of space, nor the theory which maintains the merely transcendental ideality of space, fully satisfies the plain facts of man's cognitive experience. On the contrary, *some sort of a trans-subjective reality must be accorded to this category, conceived of as an active and universal principle of differentiation.*

The enforcement of our metaphysical view of the space-concept may be effectively secured by use of symbols similar to those employed in discussing the category of time. Let it be supposed that A and B are subjects of some phenomenon of motion in a body called X. Two men, for example, are standing together upon a street-corner and are watching a horse and wagon driving toward them; or two astronomers are observing the transit of the same planet from widely different points of view. Now, in the first case, strictly speaking, the series of objective consciousness which constitutes the perception of motion in the mind of A will not correspond to the series which constitutes the perception of motion in the mind of B. On account, however, of a sufficiently close resemblance in the content of the object, X, the perceptions of the two observers are *of* the same object, which is changing in the same way its relations to them, "*in*

space." Thus, although one stream of consciousness flows in the series A_1, A_2, A_3, . . . A_n, and the other in the series B_1, B_2, B_3 . . . B_n, both are described in terms of X_1, X_2, X_3 . . . X_n — that is, as the same changes in the space-relations of the same X to the two different selves, A and B. For the full explanation of the experience of the two observers, it is therefore necessary to take into account, first the subjective peculiarities of both A and B; these chiefly explain why the series A_1, etc., differs from the series B_1, etc. One man could not see so clearly as the other; or his attention and interest flagged; or the slight difference in points of view of the two, differenced their perceptions, etc. But, second; that both A and B see the object X "*in* space" at all, and that both see it "*in* motion" at all, may be accounted for by the vague, *a priori* doctrine of space, which can simply say: It is the nature of A and B so to do. Still there remains something more to be accounted for. And, third; that both A and B pass through a series of space-perceptions which admits of being described as the series of objective, spatial changes, X_1, X_2, X_3 — X_n cannot be explained without reference to the nature and activity of X. That is to say, *the differentiating function of a being which is neither A nor B, but which is X, must be invoked to account for the objective series of space-perceptions in which both A and B substantially agree.*

In the other case — namely, that of two astronomers watching the transit of the same planet from two different points of view — the same argument holds good *a fortiori*. No such cognitive experience can be explained without assuming a *trans-subjective ground* for the variations evoked in the different mental representations of space. In this case the two series of the subjective order differ in a much more important way than in the familiar case previously considered. The series A_1, A_2, A_3 . . . A_n is now considered as a mere succession of perceptions of motion, quite unlike the

series B_1, B_2, B_3 . . . B_n. To affirm that both these mental series are, objectively regarded, motions of the same planet — or, in other words, that the true objective series for both A and B has its ground in the same X_1, X_2, X_3 . . . X_n — requires a complex scientific knowledge, which can only be made valid by a large amount of previous expert observation and of mathematical calculation. This impression of the trans-subjective character of the observed transaction (if you will, of its perfectly superhuman and immovable ground in the reality of the system of things) is greatly heightened by considering the success which the physical sciences have in their calculated predictions regarding the future motions and future positions of the objects with which they deal. Where, then, shall the cause for the marked differences between the two mental series of the observers A and B, which are both of them of necessity referred to the same object, the planet, be found? It is partially, no doubt, in the difference between the two minds, A and B; for, as is well known, even with the best of training and the strictest of attention, no two observers see precisely the same phenomena of motion when observing the same physical event. But in this case such an explanation is relatively insignificant. The really significant and important cause of the difference in the series of mental representations of motion of the same object in space is found in a difference, in the spatial relations to this object, of the two different observers.

Now, in all such cases as the foregoing, the metaphysics of either a solipsistic or a mystical idealism is quite futile to satisfy the demands of the understanding for an explanation of man's experience with things. *Such* forms of idealism cannot even describe this experience without internal and destructive contradictions. That the grounds for the detailed differences in the space-perceptions and experiences of men, with the motion of external objects are to be found

solely in the individual subject (are *solipsistic: solus-ipse*) is an opinion more absurd and untenable than the most crude and naïve form of realism. But the resolution of the common elements that analysis detects amid all these differences, into a *mere* Idea that has its realization only in a purely human form of representation, and so affords no explanation of the differences themselves, is an empty and barren abstraction. *In the nature of the realities themselves must be placed, in part, the grounds why all men represent them in space-form, and yet with an infinite variety of difference.* Nay more: the ultimate grounds of the differences themselves are to be found neither in mental caprice, nor merely in the laws of mental representation. They are themselves necessarily conceived of as trans-subjective, as *not* lying solely in the perceiving and conceiving mind of man. In this its persuasion, the workaday and the scientific realism of the multitude of men is perfectly invincible; as invincible as it is weak and absurd when it regards the spatial qualities and spatial relations of the things mentally represented, as independent of the activity of the mind thus representing them; or when it regards the mental representation itself as a species of photography, which reproduces the passive and statical but extra-mental extension and externality of things.

The necessity of making similar assumptions for the explanation of all man's experience with things considered as extended and movable in space, is enforced by a further analysis of the same examples. In the case of any two observers watching the same object from the same point of view, there would arise not simply a substantial agreement in the series of perceptions of motion, but also in those changes which accompany and constitute the mental representation of the size of objects. Every adult knows, without the assistance of experimental psychology, that the apparent size — or extension in space — of objects varies with their

distance. In the case of the two men watching the horse and wagon approaching them, the series of perceptions of both would be that of an object increasing its *apparent* size, although known on grounds of previous experience to be the same object, and so, of course, not increasing its *real* size. That is, the appearance in the minds of A and B would be of x, X, X, . . . X; although it would be known that each object in this series was actually the same X. In the case, however, of the astronomers watching the same planet from widely different points of view, the apparent changes noted would not involve changes of size, but only changes of relation to a number of other objects — other planets and stars, the zenith, the horizon, etc. Now these changes, although to a certain extent dependent upon purely subjective conditions, are nevertheless not to be accounted for without reference to trans-subjective grounds.

Man's objective experience with things, as having spatial qualities and as coming under spatial relations, is all of a kind similar to the examples just given. The metaphysical account of this experience, as an essential part of human knowledge, requires, therefore, some such view as the following: *Things are self-differentiating in their actual relations to one another, — space-wise.* They are not simply made by our form of mental representation to be, each one, for every other, another than itself; the principle of differentiation they possess also in themselves. From the purely subjective or psychological point of view, we can trace the genesis and development of human spatial perceptions and conceptions; and this investigation leads to the metaphysical conclusion: Space is in us; and this is the reason why we perceive and conceive of all things as being in "space." But the study of the physico-chemical sciences recalls us to the point of view in which remains standing the man of a naïve and unreflecting realism. This study compels us to conclude that, in some true meaning of the words, after all, we and all things are *actually* in space.

If, then, — as is admitted — space is a human form of perceiving and conceiving of things, yet both the general ground for all cases, and the special ground for every particular case, of such perception or conception, must lie also in the nature of things. And if, once more, it is the essence of space to serve as a principle of differentiation, then the service of this principle must be rendered, so to speak, both to us and to things in their relations to us and to one another. The ultimate nature of man's mental representation of things, as in space-form, must lie in the differentiating activity of a Being that shall have control over man's mental representations and also over the actual being of things.

That our metaphysical doctrine of space, as thus far developed, satisfies the demands made by the physical and natural sciences in order to render their conceptions and discoveries valid for reality, becomes clear when it is considered how these sciences treat both the relativity and the actuality of Motion in Space. The tendency of the most clear-sighted modern physics is to base all its abstract conceptions, principles, and demonstrations, upon observed facts of motion. We have already seen that this is what psychology indicates as the valid order of procedure and of life. The child actually begins his observations and his generalizations where the expert student of physics should begin. Both are warranted in beginning with facts of motion. This is the patent and the impressive thing in the world of spatial objects, — self, other selves, and things, — they are all moving. But movement as a *datum* of experience implies extension limited so as to give unity to the separate things, their relations, and their change, — "*in* space." Unity, relation, and change, are all implicit in every perception and conception of motion. When, for example, X moves from a to b, along the line a——b, it is necessarily considered as the same definitely limited X, which, beginning with a relation to the points a and b that implies coincidence with

one (a) and that also means distance in a given direction from the other (b), then proceeds to alter this relation. After X has moved, it is coincident with the point b and related to the point a as it formerly was to the point b. All this truth, we are wont to say, is implied in the *perception* or *conception* of motion. But only a very small part of all this is to be found explicit in the sensational flow of the stream of consciousness. For our sense-consciousness assures us, at most, only of a change in the content and localization of certain sensation-complexes, which have a sort of serial relation in time and a sufficient similarity in content to make them stand for the same X.

That a series of sensation-complexes of motion may be produced otherwise than by actually moving X from a to b, — as, for example, by a skilful and rapid combination of the successive retinal images, or by successive stimulations of the same parts of the retina with objects that have different sensuous qualities — students of the physico-chemical sciences as well as students of psychology, know to be true. They know also perfectly well that all their theory of kinematics, or phoronomics, as well as of statics, is a theory of relations. No body can be placed anywhere in space, without defining its relations to some one or more other bodies in space. And there is no actual movement, either to be observed or to be calculated, which must not have its direction and velocity considered as related to some other moving or stationary body. Indeed, there is no actual known motion which is not relative to a standing still; and there is no actual standing still which is not relative to a possible motion. So that "absolute" motion and "absolute" rest are alike impossible; or, at least, they are never actual in this world of things, as it is given to our minds to observe and to know it. When, therefore, physics makes use of the distinction between the "apparent" and the "real" motion of any body, it is not meant to assert that the real motion is any

less relative than is the so-called apparent motion of the same body. Without some standard of comparison to which a moving body may be brought, its real motion could never be made apparent; and the apparent motion, so far as physical science does not deal with illusions and hallucinations, is precisely as real, *quoad* motion, as it is possible for any motion to be. For purposes of theory or of the application of known laws, we may put ourselves by imagination into ideal points of view, and then inquire how the movements, if actually taking place, would appear to an observer from these points of view. This is what the Copernican theory did when it described the so-called "real" movements of the earth around the sun. But in all its process of investigation, in its discovery and application of the laws of motion, and even of those facts of motion which have not yet submitted to generalizations in the form of "laws," the science of physics believes in the trans-subjective reality of motion. In this it is exercising its legitimate right. But it does not belong to physical science to tell us what it is *really* to move in space; or to speculate as to what is the real and ultimate nature of that space "*in* which" all physical bodies have their existence and their motion. This, however, is precisely the problem which metaphysics attempts.

Upon this firmly established assumption that all movement of physical objects, although relative and measurable only by reference to points of comparison, is nevertheless a transaction in reality, the physical sciences build their complicated systems of theory, law, and generalized facts of experience. The fulfilment of the expectations which their conclusions excite, and of the predictions which they make, constitutes an ever accumulating mass of evidence in favor of the truth of this fundamental assumption. So far have they now gone in extending man's knowledge of that system of things, and of their changes in magnitude, number, and position, in the midst of which is his life and development,

that the main features of the picture may be regarded as complete. It is the picture of an infinite variety of beings, numerable and measurable, but constantly undergoing changes in the position they occupy with reference to others in the same system. And as this picture becomes more and more subjected to the test of man's enlarging cognitive experience, it becomes more and more detailed and serviceable for purposes both of explanation and of forecast; but it is altered in no one of its essential characteristics. No being becomes known, no object is perceived or conceived of, that is not also numerable, measurable, and movable, within this system. Indeed, the growth of the physical sciences in exactness of theory, and in strictness of application, is a growth in power to number and to measure the internal and the externally related movements of the beings constituting this system. This growth — that is to say — all assumes, and it more and more convincingly proves, both the relativity and the trans-subjective reality of those principles which make possible such forms of dealing with the facts of motion. And among these principles is, in some sort, pre-eminent, the real existence and the qualities of space.

The objective validity and the practical applicability of the molecular and the chemical sciences involves the same implication as to the Nature of Reality. In part, these internal movements are such differentiations as can be made objects of knowledge by perception, through improved instrumentation; and, in part, they are movements which are inferred or imagined in order to explain observed changes. But they constitute a growing body of scientific generalizations which is more and more conquering the most mysterious fields of phenomena: while at the same time, it does not destroy or alter in the least the point of view which epistemology and metaphysics must assume for their theoretical determinations of the nature of reality. For example, let the microscopist watch the motions of an amœba as it

changes its place in its surrounding medium, while at the same time changing its own contour in those ways so characteristic and as yet essentially mysterious. Here is an object: *A*, which while it moves from *n* to *z*, along a course that can be defined by no known combination of laws independently of its own "will," is the subject of internal molecular changes that, up to the present date, bear the same unexplained character. The total phenomenon observed is thus described: — *A*, moving from *n* to *z* through indeterminate points, such as *o*, *p* . . . *x*, *y*, while at the same time changing itself from *An* to *Az* in shape, in an equally indeterminate manner. Or let the example be taken from the modern scientific account of the growth of some living cell. How marvellous the description which biology now affords of the movements which go on within the cell, and toward the cell from its surrounding pabulum; and which finally result in the evolution of a complex living organism — no less significant than the body of some human being! Here, with an infinite complexity of motion, on the part of an indefinitely great number of elements originally entirely separate, — in water, air, plants, animals, — *C* changes itself through a planful series, into something unrecognizably different. By laying hold of these elements — *a*, *b*, *c*, *d* to *x*, and even almost to ∞, and by drawing them into itself; by actively rearranging them, and then dividing itself into *C′* and *C″*; and by proliferation and segregation and aggregation, etc., of cells, — all forms of molecular movements, — the original *C* succeeds in becoming the system of organs known as *B* (a human body). Or, again, let the example be taken from the inferred and imagined atomic movements which modern chemistry needs in order to explain its observed phenomena. Let us suppose we have the series of hydrocarbons — Methane, CH_4, Ethane, C_2H_6, Propane, C_3H_8 to deal with; and that we are required to make clear to ourselves what changes in the molecules are necessary in order

to render such a series possible. Only if one is at liberty to suppose that intramolecular movements of the atoms, resulting in new arrangements of position, take place, can one give any intelligible account of such a series.

Here again, however, there is as little need to multiply examples as in the case of the physics of masses whose movements may be made visible and tangible to the untrained observer. The one fact which the physico-chemical sciences find everywhere is the fact of motion. The most far-reaching telescope reveals this fact; the most penetrating microscope emphasizes the same fact. The heavenly bodies, however remote and unlike our own earth, are constantly changing their relations to one another in infinite space; the atoms are doing the same thing within the indefinitely small spaces to which the laws of their relations confine their activities. All things and all elements of all things are ceaselessly on the move; — that is, they are holding a certain individual oneness and "otherness," and are undergoing continuous changes of relation, in accordance with the terms set to them by the differentiating principle of space.

It is scarcely necessary again to criticize and to expose the essential unsatisfactoriness of either a crudely realistic, or a shallow and flippant idealistic metaphysics in its attitude toward the assumptions and discoveries of the modern physical sciences. Nor is there need to remind the more intelligent students of these sciences that, in their scientific language and forms of pictorial representation, they are not penetrating to the heart of reality. Of course, the sensuous picture which the individual observer frames, whether of the position, the motion, or the spatial qualities of things, is not a copy of what exists, — "in itself" just like this picture, and entirely independent of the observer. Just as little need is there to insist that the entire science of spatial properties and of changes in space is relative; that all its

measurements, formulas, and laws have reference only to objects which must always be considered with reference to one another. But, on the other hand, metaphysical dialectic will not easily convince the thoughtful student of the physical sciences that phenomena of motion, and the laws governing spatial properties and spatial relations of physical objects which have been built up through so many centuries on a basis of these phenomena, are without trans-subjective ground or significance as touching the nature of Reality. Neither the flippant subjectivism which compares Space to a "product of evolution" (of evolution that is not itself "in space"?) nor the solemn, critical but agnostic Idealism of Kant, will render the student of science easy in his mind, if once he betakes himself to metaphysics. For he, as well as the "plain man," feels irresistibly that man's cognitive experience, as a race, is such as to demand that the known system of different things carry within itself the principle that can account for both its unity and its differences. The essential Being of the System must be conceived of as a Unity that can realize itself in an infinite number of beings differentiated actually each from every other.

This conviction of the positive sciences reminds us that the unifying function of the category of space is not less obvious or essential than its differentiating function. Such, from the subjective point of view, is the valid conclusion of psychology and of an idealistic metaphysics. No external object (and here the word "external" includes the most interior parts of one's own body) can be known or imagined that is not brought under the unity of this one principle. Spatially considered, the world is one. Every particular thing becomes a known or an imagined part of this one World, only as it enters into relations with other particular things, in the unity of this one space. The mental act of representation is always a unifying act; it is an actual synthesis. Regarded also as a universal mental form of the

human mind, this category is a unifying function. By virtue of my representing all objects of experience in this way, common to me with all men, I am made one with the race. I can thus give and receive knowledge about things, — their size, shape, position, and movements, whether external or internal to the things themselves. I can thus both learn and teach a doctrine of the world of things, which shall have that formal unity and that practical value in enabling us to interpret and predict, which are essential to the very nature of *science*.

Moreover — as has been implied in the last sentences of the preceding paragraph — the actual operation of the category of space in the world of real things is to exhibit them, as different and manifoldly situated and related, yet in the unity of a single system. In order to effect this actual unification, space must be regarded as something other than a mere conception, or a mere form of human mental representation. The significance of this demand has already been partially indicated by calling attention to the fact that men speak of Space *as though* it were an active principle; they conceive of it after the analogy of a doer, or an agent. But whatever they may mean by regarding all things as *really being* "in space," the phrase takes note of their unity under this conception, as truly as of their differentiation. You and I are made "other" to each other by this principle; but you and I are made "one" with each other, and with all other things, by the same principle. Were it not for the actual unifying effect of this principle, men could not live in *one* world, — separate beings, and yet having commerce with one another and with the same or with different things. For me, indeed, "here" means one position in space; and for you, "here" means another and different position. And yet we may point out to each other the same thing as in the same "there"; we may meet each other here, in the same city; or we may part from the same home to go yonder, in

different directions. It is the category of Space as truly as the categories of Time and of Force, that renders all the myriad beings of human cognitive experience kindred within one World.

This is perhaps the fittest connection in which briefly to notice certain problems connected with the criticism of the category of space. Some of these problems have quite unwarrantably increased the current stock of metaphysical puzzles. One of them concerns the so-called "infinity of space." By this phrase it cannot properly be meant to ask, whether the mind of man can get by perception, or give to itself by imagination, either the empty or the filled-up picture of a world of things that has absolutely no limits to its extension; nor to inquire, whether we cannot somehow divest ourselves of all obligation to this category and so imagine, or think about a world of things that shall exist — many things in one world — without being "in space" at all. The true state of the case is as follows: Subjectively regarded, the infinity of space is provided for, when it has once for all been recognized that space is the universal and necessary mode of the human mental representation of a system of things, so differentiated as to be, one and another, external to each. Objectively regarded, the infinity of space is affirmed when it is recognized that, without limit or exception (*in-finis*), all objects constituting this system of perceived and conceivable things exist in accordance with this principle. Thus, as a pictorial representation, I cannot know the infinity of space. As a conceptual form of differentiating the particular objects in the unity of the one system, I cannot fail to know the infinity of space.

In somewhat the same way must we solve the puzzle as to the "infinite divisibility" of space. The mind cannot actually perceive, or even picture, as going on without limit, the process of differentiating the particular beings of the world in respect to their spatial qualities and spatial rela-

tions. Neither can we mentally represent any particular being which shall realize this infinite divisibility as though it were already accomplished. I can, indeed, by a process of abstraction, think and reason about relations of position, *merely as such.* And this is done by every mind, whenever the fundamental postulate of geometry is apprehended: "Between any two points, anywhere situated in space, one, and only one, straight line can be drawn." On the other hand, the character of space (and this means here the pure form of every mental representation of things), of itself, affords no reason why the process of dividing, and so of externalizing to one another, the parts of any thing, should ever come to an end. But this does not constitute, as Kant held, an antinomy which so affects the very nature of the category of space as to destroy all applicability of it to trans-subjective realities. This very antinomy, the rather, shows that space is a principle, *both* of differentiating *and* of unifying; and that any limit to the actual differentiation of things must come from some other characteristic (or *motif*) in Reality, than that representable under space-form. Who shall say, *a priori* and in the name of Space, how fine or how coarse God shall decide that things and their elements are, in fact, to be?

Once more, it confirms further our view of the real nature of space to reflect critically upon the discussion, by mathematicians and physicists, of space of more than three — of four, or of n dimensions. That all men's pictorial representations of spatial qualities and spatial relations *are* actually three-dimensioned there can be no dispute and no doubt. Moreover, if we disregard certain alleged occult phenomena, which can scarcely yet lay claim to acceptance as facts, the conception of "three-dimensioned space" will serve to explain all the facts of human experience with the external world. It is three-dimensioned space which all the applied sciences of physical objects both assume and also verify by their discoveries and their predictions. On the other hand,

these sciences cannot deny *a priori* that Reality *might* differentiate, and still unify, its innumerable particular beings and elements, after a manner analogous to that which furnishes the ground for our mental representations of things in space, and yet in a more complex and varied way (a "fourth," or more, up to an n^{th} dimension). If we should finally discover facts of knowledge which required the assumption of "n-dimensioned" space, we might make it as a permissible hypothesis or even a valid theory; but this would not, of itself, in the least degree affect our present three-dimensioned form of mental representation; and as little would it justify us in changing the metaphysics of the category of space.

The ontological doctrine which is demanded by the facts of experience and by the conclusions of the positive sciences, may be summed up as follows: There belongs to the Being of the World a principle which actually differentiates this Being into a vast number of particular beings; and these particular beings are co-existent in time, and yet "external" each to every other; but the same principle, at the same time, unites all these beings in a system of reciprocally determined changes of relations to one another. This principle both assigns, at every moment of time, the place which each being assumes for itself within the one system; and it also admits of a series of changes in the relations pertaining to such assignment. This same principle is also the ground of man's perceptions and conceptions of the spatial qualities and spatial relations of things. It is the trans-subjective cause of our mental representation of ourselves, and of all that is "other" to us, — both other selves, and other things — as in a space-system. From this it follows that, as a principle, it cannot possibly be wholly alien to us, who are the both active and passive subjects of this particular form of mental representation. Besides, the genesis and development of our space-perceptions and conceptions can be traced

in the history of the mind-life. For us, and for all men, this principle is a category; it is one of those universal and necessary forms of cognitive experience which act, on the one hand, as binding laws of the subjective development, and, on the other hand, indicate a grasp of the mind of man upon the nature of reality.

Combining the results of this discussion of the category of Space with those reached by discussing the category of Time, the symbolism already adopted may be expanded as follows: — Let the Being of the World, as respects its infinite content, $= \infty$. Then the Being of the World *in Time* may be represented by the series $\infty_1, \infty_2, \infty_3$, etc., — through unending time, to ∞_n. But the Being of the World *in Space* provides that each "moment" in the series of ∞ shall include a systematic ordering of the particular beings in such manner as to secure their "otherness," for all purposes of physical and social intercourse, yet within the unity of a single system. It provides that ∞_1 shall be, and shall be known as being, $= (a_1, b_1, c_1, d_1, e_1, f_1, \ldots n_1)$; $\infty_2 = (a_2, b_2, c_2, d_2, e_2, f_2, \ldots n_2)$, etc.; — in accordance with the particular being of a, and of all the other interdependently related beings, and with the nature of the "laws that govern" the changes of all their spatial qualities and spatial relations. This was seen to mean that *the Being of the World is a Life*, said to be in time because it is a series of states, each having an infinitely rich content belonging to it.

But what, as bearing upon, and as contributing to, our Theory of Reality is the meaning of this symbolical way of conceiving of the category of Space? . . . The answer to this question can only be partially indicated at present; no answer can ever be so satisfactory for the category of space as for the kindred category of time. But it may well be noted that the discussion of the space-concept, as related to all of man's experience, cannot avoid introducing other concepts — such as change, relation, and especially all those

involved in the distinction of Self from other selves and from things. One conception, however, seems to be most essentially involved in all attempts to answer the inquiry: What is it really to be "*in* space?" This is the conception of *Force*. Unless the world of concrete realities were a system of beings, with *force* in them — as we may say in a figurative way — no real existence in space could be, or could be known. Two considerations may for the present suffice to establish this contention. First: it is a common but exceedingly significant phrase, to speak of all real things, as "occupying" a definable and measurable amount of space. One may not convert into each other offhand the two phrases — "really to be in space" and "to occupy space." But both theoretically and practically, there *is* no real existence in space which does not *occupy* that same space. To be actually posited or extended, spatially, a thing must *seize* and *hold* a certain definite position and extension. This it cannot do unless it be, somehow, possessed of the required forces. But second: if we examine anew the experience in which our space-concept is obtained and developed, and, by building on the truthfulness of which, the physical sciences rear and solidify their wonderful structures, we discover the same significant thought. The ultimate subjective fact is the perception, and then the conception, of Motion. The ultimate need to be satisfied by the category of space is the effecting of those regular and lawful performances in the World-system which science observes and conceives of as motions, trans-subjectively initiated and controlled. Motion, however, is not something that can be defined or accounted for in terms of space *merely*. To illustrate this, suppose that the popular definition be accepted: Motion = "change of place." At once the question must be raised: Is this a change that is already accomplished, or a change that is in the process of accomplishment? The answer must be: All actual motion is rather something changing its position,

or its relation in space to other things. Hence real motion = something moving; or motion = motion. But this fact of motion, which cannot even be defined in terms of space, when space is regarded as some mere thought-form or passive framework of a world of active Reality (so-called "pure space"), is, as we shall see later, intelligible only as it implicates force.

No actualization of the space-principle is, therefore, possible, either from the point of view of its subjective origin or of its trans-subjective applicability, unless this principle itself is conceived of as *the mode of the action of one all-differentiating and yet all-unifying Force.* And surely here we have come close to the very heart of our conception of Selfhood, as giving us the essence of the Being and the Life of the World. The category of space must be referred for its trans-subjective ground to a World-Force, that arranges in a determinate way all the different beings of the world, including each Self whose pictorial representation of the spatial qualities and spatial relations of things is determined by this same Force. As a mental representation in us and in all men, its actuality implicates an orderly functioning, both to differentiate and to unite, of a Being that is not ourselves, and yet that includes our Self and all not-selves in the one system. Space is not *simply* our human form of mental representation; it is really the correlated form of the functioning of this World-Force. Further information as to the nature of this correlate cannot be obtained from an analysis merely of our space-consciousness and of its implicates.

CHAPTER X

FORCE AND CAUSATION

THE different conceptions thus far subjected to critical examination have all been such as seem to admit of some kind of inductive proof by reference to our sensuous experience with things. All the qualities which the concrete realities of the world possess are either immediately knowable, or are capable of being imagined, in terms of sense-perception. Changes, too, are perceived by eye and hand and ear, and even by the less discriminating and objective of the senses. Although to relate is the constructive act of the intellect, and being related may be said, from the subjective point of view, to be imposed upon things by man's intellectual activity, yet the necessary conjunction of this activity with all the passive aspects of human sense-consciousness makes it proper to speak as though the mind became "immediately aware" of the relations that actually exist amongst things. Space and time, too, seem to furnish forms and laws, conformity and obedience to which are enforced by all our sensuous acquaintance with the World of real existences. In some sort, therefore, Becoming and Change, Quality, Relation, Time, Space and Motion, may be said to be the more obvious and sensuously apparent of the categories.

But we can no longer suppress a momentous truth which has been slumbering just below the surface of all these more superficial of the categories. Indeed, this truth has seemed to arouse itself and lift up its head, at intervals, during all our previous discussion of the categories. Each one of them

has given token of the intimate presence of a yet more spiritual and profoundly influential conception. For example, it was found that qualities are neither known nor conceivable apart from something that is said to "have," or to "exercise," the qualities; and this vague "something," when questioned gave back an unmistakable echo of a conception of *force* in reserve, as it were, within the very depths of each particular being. Again, when becoming and the various forms of change were considered, it appeared that some active principle must always control the becoming, and thus account for the origin and the character of every particular change. This principle of a control of change hints at the same conception of force. Relations, to be sure, sometimes seem so calm, statical, and impassive, that *they*, at least, would not suffer if all forms of the manifestation of force were removed from the world. But at once we are reminded that the mental act of establishing relations, whether by observation or by argument, is about the most energetic thing which a human will can accomplish. Forceful, pre-eminent, is the mind that seizes and works out the most complex and subtle relations amongst the "stuffs" of its sensuous experience. And some objective relations unmistakably demand force for their establishment and their continuance or change. Such are all relations, for example, of tension, strain, attraction, repulsion, suspension, etc., in physics; and all the ideal relations of cause and effect, means and end, etc. Moreover, since no actual relations are perfectly statical and unchanging, the presence of force must be recognized in the midst of them all. Finally, the conception of a differentiating and unifying force seemed necessary in order to complete the actualization of the categories of time and space.

All this — to speak figuratively — may be said to amount to this important truth: *a dynamical view must be substituted for a merely statical view of the Being of Reality.* Or rather, all the universal and necessary forms under which man knows

the World show but the surface of its nature until he recognizes the truth: The Being of the World is a Unity of Force.

Now we are by no means ready to identify all that is knowable with the abstract conception of a oneness of force. This would be substantially to repeat the ontology of Mr. Spencer, however much the particular terms were varied in which the conception was elaborated. Nor are we satisfied to employ Schopenhauer's much more intelligible term, and thus leap at one bound (with no attempt at discussion of the steps in the argument, but with scores of interesting, though partly irrelevant illustrations) to the conclusion: the all-inclusive Reality = a Unity of Will. Besides, as to the nature of that unity which metaphysical system must effect amongst the indefinite variety of forces (the almost infinite number of wills) actually known to man, there is needed detailed critical inquiry. It is in place to notice, however, that some conception of Force pervades all cognitive experience, and to inquire critically into the genesis, development, objective application and significance in the physical and chemical sciences, of this conception, and into its ontological import and validity. For the truth is beyond all controversy that no semblance of a satisfactory theory of reality can be advanced, which does not give a most prominent place to this category. Indeed, it is just this category, which makes alive, effective, and impressive, both our practical and our theoretical view of the World. This gone or left out, we and all things can scarcely be even so much as "A moving row of shadow-shapes."

The genesis and earlier developments of the conception of Force are connected with a certain experience, common to all men, which arises in the consciousness of those terms on which the Self has intercourse with Things. There are several uncertain factors in the analysis of this experience, even at the hands of the most incisive of experts in psychology. Indeed, so profound and comprehensive is this experience it-

self that no analysis will, probably, succeed in sounding its depths or in mapping out its entire domain. But its prominent features are sufficiently well-known and agreed upon to serve as points of attachment for a valid metaphysical theory. Into the details of this analysis, or into the defence of our own peculiar views respecting the psychology of the "Force-concept," it is not necessary to enter here. It will suffice to outline this experience in the most elementary and sketchy fashion.

If the "plain man's" consciousness is inquired of, as to the view which it holds concerning the explanations necessary to any understanding of the changes taking place in the complex of observed phenomena, both internal and external, this view may be suitably expressed in about the following way. I am myself constantly doing a lot of different things with my self or with the other beings which I meet in the course of my experience; but, then, these other beings are also constantly doing a lot of different things with me. Moreover, I know equally well that these beings are constantly doing a lot of different things with one another. In short, I live in a world of beings that cannot, and that do not, let each other alone; but they are, on the contrary, always doing something to one another, and having something done to them by one another. Practical knowledge consists, indeed, in knowing how to do with things; how to get them to do in certain ways with me; and how to avoid their doing with me, in certain other ways. All knowledge, both practical and theoretical, of the world in which I myself am placed, is knowledge of the manifold ways which its beings have had, and may be expected to have, of doing something and of having something done to them.

That view of the changing complex of phenomena, which ascribes this complex to the reciprocal influences of the different beings of the world, in the centre of which the self stands as both observer and doer, is really a very profound and complicated view. It brings back upon us all the problems

that belong to the attempts to deal critically with the conception of reality. But it need only be noticed now that the view is based upon the conception of Force as a Cause of Change. At the very heart of that experience which expresses its conclusions in such a naïve but rational and highly suggestive way, we recognize the "self-felt but inhibited activity" to which we were obliged to refer as explaining the rise of the conception of "pure being" or "substantiality," as applied both to the self and to things. But, as was then said (see p. 123 f.), no actual, concrete experience is ever an experience of *pure* being, *mere* substance, or *unconditioned* activity. And the category now under examination — the conception, namely, of force as a cause explanatory of change — shows plain signs of the aggregation of other factors about this central and unanalyzable factor of all human experience. Activity is never *pure*; action is always followed by change in the observed internal relations of the Self, and of the Self toward other Things. It is in this consciousness of acting, of being inhibited, and then made aware of subsequent changes in the relations of the Self and of external Things, that the conception of Force is formed. *The action of any being, when regarded as the cause of subsequent changes of relations, either internal or external to that being, is its exercise of "force" so-called. Force is action regarded as the cause of a change of relations.*

Further reflection upon every correct description of that particular experience in which the conception of force originates shows, in a very impressive way, how inextricably intertwined are the categories in the genesis and development of all human experience. Here, when starting the attempt to discover the roots of the category of Force, there have been uncovered the kindred but not identical categories of Change, of Relation, and of a peculiar kind of relation which is ordinarily called that of "being a Cause." But at the centre of all is the mysterious consciousness of "being

alive;" and this was found to be equivalent to a "self-felt activity."

The conception of cause ranks itself, from a certain point of view, under the conception of relation; for causation is one among several kinds of relations, — namely, that particular relation sustained by two beings in action, when one is said to be somehow accountable for the other's change of state. If it were not for observed changes in the relations of things there would surely be no need to discover, or to imagine, any explanation of change in the form of forces said to be "inherent in," or "*transeunt* upon" things. Yet cause itself, as will appear more clearly later on, is a conception of much greater complexity than is the conception of either action or force; although the latter conception — that of force — cannot be detached, either in one's experience with particular realities, or in one's theory of reality, from that peculiar relation between things to which is given the name of "cause." Force itself, then, cannot be described (not to say defined) without reference to changes in the relations of things for which it furnishes the explanatory ground, or cause.

What has just been claimed in a general way may now be illustrated by some example. Suppose that I have made up my mind to lift a stone, which is rather heavy for my unaided strength, and to place it in another position than the one it now occupies. It has fallen from my garden wall; and I will replace it, if I am able. In planning this transaction it is likely that no thought, not to say vivid feeling, of actually exerting force has entered the stream of my consciousness, up to the moment when I begin lifting hard at the stone. But if I have deliberated over the prospect of my success in the coming effort, my mental picture of the volitions I intend to put forth has been followed by a mental picture of resulting sensations of tension and strain on my part, and of the awakening, in a strong flood, of the feeling

of external resistance. If I chose to be very nice in my discrimination of the minute changes going on in my own self-conscious life, I might doubtless detect that the process of deliberation itself, with its consequent mental "effort" to determine beforehand the results of my yet further subsequent muscular effort, had already caused a change in my own self. But, disregarding these niceties, which do not eventuate in the plain man's consciousness, I bend my back and stiffen my muscles to the task. At once the character of that stream of consciousness I call myself becomes most profoundly modified. Looked at from one point of view, I am aware that I am putting forth (for me) an immense amount of *my* force; looked at from another but closely correlated point of view, the stone is resisting this force of mine by itself putting forth a counteracting force. *I* am lifting upward: *it* is pulling downward; and the practical question is, which of the two is going to exert the dominant and overcoming force. Slowly I raise it to its place on the wall; — it meantime showing the teeth of its obstinate resistance by scraping the skin, bruising the flesh and straining the heart and back of its fellow energizer. Having overcome the stone with extreme difficulty, I now sit down on another neighboring stone, — myself overcome, — and proceed to reflect upon the psychological description and metaphysical import of this accomplished transaction.

About certain features and implications of every experience like that just described there can be little or no doubt. On the side of self-consciousness the important factor is this: the idea and volition to produce a certain change in an object not-self — that Thing lying in space out of me and in certain observed relations to other external objects — has been followed by action in the psycho-physical Self, with an immense increase in the conscious "feeling of effort" so-called. Much of this complex feeling of effort is itself, psycho-physically considered, of peripheral origin; it is a

modification of sensation-consciousness due to the altered condition of muscles, joints, skin, heart, lungs, diaphragm, and other organs of the body external to the central nervous system. But there seems as little reasonable doubt, that this conscious modification is not all of peripheral, but is also largely of central origin. Quite irrespective of this disputed point in physiological psychology, there is absolutely no doubt as to how the total experience appears to the self in consciousness; it is as an immediately known, an "envisaged," exercise of its own force in the accomplishment of an end which has been previously presented in idea to the same self. *I* moved that stone — to be sure, *with* my body, and only by "putting forth" all my strength. It is in the force of which I was indisputably conscious as belonging for the time being to my psycho-physical self, that the *vera causa* of the change which has happened to this thing is to be found. This psycho-physical force of mine was, however, resisted strongly by the force of the stone; it was inhibited so that at one instant it seemed as though my idea could not get itself realized in the contemplated change of the object-thing. Thus the entire transaction appears from the most interior point of view as a conflict of forces differently centered — the one in my Self, and the other in the Thing, not-myself.

Such a complex transaction, however, from start to finish, is not satisfactorily described in mere terms of self-felt and yet inhibited activity. For my more objective experience undergoes meanwhile a series of concomitant and dependent changes. By the various appropriate forms of sense-perception I am made aware of a succession of crossed and interlaced variations in the position of my own bodily members and in the positions of the object-thing (the stone); I perceive also a variety of changing relations between us both and other things. The stone is lifted, *from* the ground, *in* my arms, and placed *upon* the wall. Things external to my

body are now arranged differently from the manner of their arrangement a few moments ago. Popularly expressed, the exertion of my force has made the stone change its place in space, by motion from one position to another; the exertion of the stone's force has resisted, pained, and fatigued me. The accomplished change in the stone's relation to other things has for its cause my forthputting of energy, directed toward an end mentally represented beforehand; the accomplished change in the condition of myself has for its cause the forthputting of the energy of the thing with which I voluntarily entered into a relation of conflict of forces.

Such conceptions as the foregoing, doubtless, seem crude and anthropomorphic to the advocate of a dialectical metaphysics. Crude they may be; and anthropomorphic they certainly are. But in them there lies hidden the entire ontological problem of the world's incessant behavior, as that problem is given to man in all his cognitive experience concerning the terms on which he has commerce with his fellows and with things. And the alleged anthropomorphism, instead of turning out to be an incidental feature which progressive science succeeds in throwing off, is really a valid system of naïve explanations that underlies the entire body of human science. *Such anthropomorphism is an explanatory principle which must be trustingly received and faithfully applied in order to understand the deepest Nature of Reality.* It is based upon the assumption that the transactions of the real world are all to be accounted for as the work of beings that, by virtue of the powers, or forces, centring in them, are the causes of changes in the relations which they sustain to one another. The moment, however, this assumption is applied to transactions between things other than selves, it implicates the belief that things, too, are *so far forth* actually constituted after the analogy of the self-known Self.

In a word, we have here discovered the genesis of the con-

ception of "Substantial Causality." This is a conception which arises inevitably out of our experience with things, and which, in the way of analogy, is carried over into the constitution of the things themselves. As says Wundt[1]: "The substantializing of the causal-concept undoubtedly has its psychological roots in our active personality" (*in der handelnden Persönlichkeit*); and, "in its first stadium the conception of Force, or Energy, is identical therewith": "*Kraft ist substantielle Causalität.*" The force that is ascribed to things — and without such ascription the entire world of ordinary experience and the world of scientific interest and achievement is a mere phantasmagoria, a swarm of "shadow-shapes" partially amenable to logical formulas — is projected into them on the assumption that they, like us, are real centres of self-activity, substantial causes of mutually determined changes in reality.

The psychological objection to this view, that our experience when we seem to ourselves to be "*exerting force*" is illusory, does not alter the metaphysical conclusion. For the fundamental problem is wholly missed by this objection. This problem is set by the inquiry: What is the genesis of the conception of force itself? and, Why do I attribute force to things in their relations to me, even if I am not warranted in attributing it to my Self in relation to things? To derive the genesis of the force-concept from a mere, passively conceived sensation-content, is to substitute that which is first for that which is last; and *vice versa*. Or, rather, the cognitive experience out of which arise the conceptions of my Self exerting force, and of having force exerted upon me, is one and the same experience. Being active and being passive, doing and being done to, influencing and being influenced, exerting force on another and being forced by another, — use what words you will, — they are explicable only as correlate terms.

Moreover, such correlate terms cannot be explained, or

[1] System der Philosophie, p. 292 f.

even described with reference to their essential content, without reliance upon the validity of this same primitive universal experience. Somehow or other all men have the conception of force, and employ it as a principle of explanation for the changes which take place in the relations of the particular beings of the world. The chemico-physical sciences build their structures upon the same explanatory principle. But this conception cannot be obtained from any merely external and sensuous observation of the behavior of things. There is nothing in the mere intensity or extensive magnitude of sensations, considered as content, to justify or even to suggest such a conception. What if, when one grasps the stone and pulls upon it, the muscular and tactual and other sensations become more painful and intense, and seem to spread over a larger area of the body? What if one feels certain internal sensations, located in the heart, lungs, or diaphragm, changing in similar fashion? All this is, in itself, mere fact of change to be discriminated in the content of consciousness. But why explain this fact of change by attributing it to some invisible, intangible, non-sensuous cause, called my *force*, on the one hand, and called the *force* of gravitation, or the down-pulling *force* of the stone, on the other hand? To this question no answer can be given that does not recognize the truth which constitutes the core of every man's experience in all such cases. On the one hand, is in fact, a self-felt activity, and on the other hand, an inhibition of, or opposition to that activity; and this latter is actually attributed, after the analogy of the Self's behavior, to the Thing that is not-self.

Now if by the study of physiology and physiological psychology it is shown that what appears in consciousness as a self-felt activity is, after all, only the feeling of the back, arms, heart, lungs, and diaphragm, and that these important organs force upon consciousness the illusion of being a centre of activity, the essential truth of the case is not

altered. The question recurs: Why are the back, or other organs of the body, thought of as being the "substantial causes" of both the change in my consciousness and also in the position of the external thing? This singular illusion as much needs to be accounted for as does the most naïve confidence of an unreflecting realism. In fact, to speak of the application of the force-concept to the Self as an illusion only increases the difficulties in the way of understanding the genesis of the concept itself. Instead of doing honor to the real potencies residing in things, and to the sciences which deal so successfully with these potencies, this defective psychological analysis goes far to undermine the reality of all force and the truthfulness of all the physical sciences.

The candid physicist is apt to have far less trouble with his metaphysics of force than is the psychologist who is influenced by the prejudices of an insufficient analysis. This is because the former deals with the phenomena in terms of conceptions that, however crude they may be, are based upon fundamental *data* in some genuine, safe, and realistic way. The examination of the current physical uses of this category is therefore most instructive to the student of systematic metaphysics. But on the threshold of any such examination we are met by two classes of writers on physics. There are those who, being from the first desirous to avoid all metaphysical assumptions or else suspicious of the particular implications which belong to the conception of force, try to make as little use as possible of this conception. But other writers, seeing clearly that this conception cannot possibly be dispensed with by the scientific student of physical principles, define it, at least in a provisional and semi-practical way. They then proceed either to employ the conception in the development of their science, or to substitute for it the more definite and manageable conception of energy.

It is notable of that class of physicists who make the more

serious attempt to handle the conceptions of physics with as little as possible recognition of the metaphysical nature of the conception of Force that they succeed in appearance only; over and over again they find themselves compelled to introduce covertly the same conception, although expressed in obscure and inappropriate terms. If the word "energy" be substituted for the word "force," we do indeed obtain a most valuable new working theory. But if we define or even describe in terms of our experience with real things, what is meant by energy, we can scarcely avoid introducing in a modified way factors belonging to the other and more fundamental conception. To speak of "work" actually done, or of the "potential" of work, involves a reference to essentially the same experience. All the measurements of physics are indeed, primarily accomplished by the application of some standard to the *results* of force — that is, to the movements of physical bodies, or to the distances and relations in space of bodies regarded as movable. But the very significance of spatial relations, as indicating the possibility, or the certainty, of actual movement in the future, is entirely lost without reference to the conception of force as the non-sensuous cause of change.

Physics itself, as soon as it becomes anything more than a purely abstract science of phoronomics, is essentially a science of dynamics. Indeed, phoronomics itself = kinematics; and the latter cannot be brought into touch with reality anywhere except as it "forms properly an introduction to mechanics," because it "involves the mathematical principles which are applied to its data of forces."

Still further, it will be found that all attempts to describe or define those material beings which physical science investigates, are obliged to connect the conception of force, as a cause, with their description or definition of matter. In the barest and vaguest thought about it, *matter* is, at least, a "that-which" producing effects in the senses of man. And

if this bare and vague thought is helped out — as must happen before the beginnings of a science of physics can emerge — by statements concerning the habitual doings of this substance, these statements themselves become descriptive of different effects ascribed to one substantial cause. Here again the mind is led back to the experience which warrants this belief: To be a force = to be a substantial cause.

Abundant illustrations of the impossibility of treating physical subjects without virtually introducing the conception of Force as a Substantial Cause of changing spatial relations may be derived from all the writings which have made the attempt at such treatment. It is better worth the while of the critical student of metaphysics, however, to note how all the more definite accepted descriptions of this category — however imperfectly or awkwardly expressed — come to the same fundamental conclusion. The world of things which are constantly changing their relations in space, by movement in gross masses, and movement of their molecular or atomic parts, must be explained to the human intellect as dependent upon invisible and intangible causes — called the forces "of," or "in," or "belonging to," things. These very words "of," and "in," and "belonging to," are themselves the embodiment, in figures of speech, of that same fundamental and essentially unchanging experience which has already been described and analyzed. The physical interpretation of these figures of speech would lead science into not a few awkward predicaments; it is, therefore, quite the correct thing for modern physics to decline to discuss the meaning for reality of these significant figures of speech. It is not the physicist's business to tell what is the qualification, or aspect, of things which makes it at all appropriate for us to speak of them as in *the possession of*, or as being *the seats of*, those physical forces which are the invisible and intangible substantial causes of the most complex of changes that go on in the material World.

"Force," says Sir William Thomson, "is any cause which tends to alter a body's natural state of rest or of uniform motion in a straight line." Here the essentially true factors of the conception are precisely this: Force is the cause of any change in the motion of a body as referred to another body. To speak of "rest or of uniform motion in a straight line" as the "*natural* state" of the bodies of the physical universe is a fiction which, however useful it may be for theoretical purposes (and of this even we have our doubts) is an entirely inadequate representation of the real facts of the case. This theoretical simplicity does not represent nature as we find it. Rarely, if ever, does nature show to man, as existing in the present or as having existed in the past, in any of its masses or of the particles composing its masses, either rest or uniform motion in a straight line. And if such were the "natural" state of the world's physical bodies, no system of definitely constructed and organized things which is precisely what we call Nature, could ever be accounted for by any theory of forces that did not take experience more into the account. The natural state of all things is, so far as experience makes us acquainted with it, *rest*-less and ceaseless changes of motions, through infinitely varied spatial relations to one another. The invisible causes of these changes are the forces that are figuratively said to "reside in," or "belong to," the different things. As to the propriety of identifying a mere tendency with a force, as does the definition of Thomson, we will not remark here.

More clear-cut is the definition of force which reverses the point of starting in the following way: "Every cause capable of determining the movement of a body, or of modifying a movement already existing, is called Force."[1] But to speak of "a cause capable of determining" is to repeat the

[1] From the "Cours élémentaire de Physique" of Boutan and D'Almeida, I., p. 6.

causal idea twice over; and this, after having once sufficiently indicated its existence by the word "cause." For no force-less being is "capable" of doing anything; and no being can "determine" the movement of another being without acting upon that other as a cause. When, again, force is defined as "any action between material bodies by which they change or tend to change each other's condition" (so S. Newcomb), the thought is expressed that the activity of one thing is regarded as a cause (as that "*by* which") of change in the internal or external relations of another (a mutual change, as "between;" or possibly to be regarded as confined to a change of "condition"). But if all physical phenomena are resolved into changes of position or of motion, then force is briefly defined as "the efficient cause of all physical phenomena" (E. C. Pickering). Indeed, most of the modern definitions of force, as a fundamental conception in physics, contain only comparatively slight modifications of the language in which Newton stated the fourth definition of Book I. of his "Principia": "Force is an action exerted upon a body in order to change its state either of rest or of moving uniformly forward in a right line." But Newton's statement involves both the same assumption, that rest, or uniform motion in a straight line, is the natural condition of real things, and also the fictitious and external view of the whole subject which regards an action as something capable of actual transmission from body to body. It also has this superfluity: it introduces the teleological idea ("in order to"), — in language, if not in fact. Somewhat unnecessarily metaphysical for the purposes of the physicist, perhaps, are the following attempts to define this category: "The invisible causes of these reciprocal actions we call forces;"[1] or, "The last cognizable cause of any change whatever is called Force."[2]

[1] Müller's "Lehrbuch der Physik und Meteorologie;" I, p. 30.

[2] Bohn's "Ergebnisse physikalischer Forschung;" I, p. 3.

For the vague and intractable metaphysical conception which attaches itself to the word Force, a substitute has been provided, with a more definite and workable content, by modern physics in connection with its use of the word "Energy." Here the thought is a measurable quantity of work which is expressed by the configuration or motions of the bodies constituting a system and so reciprocally related to each other. Thus we are told that "energy may be defined as the power of doing work or of overcoming resistance" ("Encyc. Brit."). But since "overcoming resistance" is one of the finest and bravest ways of "doing work," one scarcely sees the need of employing both clauses. Two of the writers, whose definitions of force have already been quoted, express their conception of energy, as follows: "Energy is an ideal physical quantity which serves as a common measure of certain forces or results of action in nature" (S. Newcomb); or "By energy is meant the capacity of a body to do work" (E. C. Pickering). Of these two definitions the former brings out more clearly the measurableness of the energy belonging to every physical body, whether by virtue of its position, or its motion, in relation to other bodies; but the language becomes vacillating and obscure when it divides that which is measured into "forces," on the one hand, and "the results of action," on the other hand. The second of these two definitions fails to bring out clearly the quantitative aspect of all those problems in physics which deal with the conception of energy. For unless "capacity" *means* merely amount of work, we have in it and in the words "doing" and "work," the same idea repeated once or twice over.

As far as the metaphysical view of the category of Force is concerned, the physical conception of Energy has nothing either to add or to detract. But in its way of representing the real beings and actual transactions with which it is the business of physical science to deal, the latter conception, as

customarily held by modern writers, is much the more correct and satisfactory of the two. For, in the first place, the modern conception of energy isolates some system of bodies, and considers as its definite problem their changes of actual position or of motion; second, it emphasizes the doing of work, which is something appreciable and measurable; and, third, the different "works" performed by the different bodies or systems are held to be comparable with one another, by application of some common standard, in terms of number. Upon the basis of this kind of computation we may arrive at the dynamical science of the changes of things. This, then, is the picture of a world of real physical beings, all at work, with varying and yet comparable intensities and results. No real being is there in this world, that does not do some work; no being is there whose work may not be brought into relations with the work of other beings for their mutual hindrance or furtherance. A grandly dynamical world, where every "body" is at work; and neither beings, nor forces, are ghostlike and merely conceptual, or in the air! Or — to state the truth in less figurative terms, although perhaps in a way which trangresses the limits of safe physical theory: — "The conception of energy arises out of the direct recognition of the fact that every possible change in the physical universe is effected against some *Force*, and it is just in virtue of its power of overcoming such force that a body is said to have energy. . . . It is in virtue of its possession of so much energy — a measurable thing — that any body does work, *i.e.*, produces change against force."[1]

If now we analyze more carefully this dynamical conception of the world which modern physical science has adopted, it seems to involve the following important particulars: (1) The world of things is known as having some sort of Unity that is referable to the Conception of Force; (2) this unity

[1] "Relation of Matter to Energy." Monograph by "B. L. L."

comprises, however, a vast number of particular beings that must be regarded as in possession of, or as centres of, definite and measurable amounts of force; (3) these particular beings, — vehicles of energy, or centres of force, — as they change their relations to one another in space, or their internal condition (the relations of the molecules or atoms that compose them), must be thought of as increasing or diminishing in the amounts of work they are doing; (4) the change in the amounts of work doing by these particular beings is to be regarded as caused by a redistribution of the One Force of the world; (5) all changes of relations and conditions, which take place through this ceaseless redistribution of the World's Force, are in accordance with certain ideal limitations (that is to say they are not haphazard, but are according to law); and, finally, (6) thus does the World acquire a Unity which is both dynamical and ideal, because it consists of a vast number of beings, that are all doing work "upon" one another, but in some fashion that has respect to a set of regulations and, it may be, to some common goal or end. At any rate, upon this last point, the actual results observed, and both accepted as a working postulate and also progressively proved by experience to constitute a true physical theory, indicate an orderly behavior of many beings, in the accomplishment of a "self-respecting" and "mutually respecting" *work*. This work, as a totality and in all its details, involves constant resistance, conflict, reaction as well as action, destruction of the old as well as construction of the new. But all this conflict and change does not affect any of these six essential "moments" in the physical and dynamical conception of the world.

Now, before a student of systematic metaphysics translates this picture — so fair and grand, yet terrible in some of its aspects — into the ultimate terms of his theory, he must give some attention to those more particular features of the picture about which modern physical science is still

obscure and uncertain, and even, perhaps, in some cases, self-contradictory. Among such features is the customary way which physical science has of elaborating the doctrine of this ceaseless redistribution of energy. Of course, it would not be fair to expect of physical science that it should think out for itself the meaning of all the figures of speech which it is obliged to employ. Probably few of its students do not recognize at once the truth of the statement that to speak of energy as some kind of an entity, which can actually pass from one physical body to another, or which can be regarded as a kind of gross sum that is capable of being itself subdivided into different amounts and species of energies, is to employ highly figurative language for the scientific expression of a multitude of facts that differ widely in their character as given by our actual experience. When, then, so clear thinkers as Tait and Clerk-Maxwell assert that "energy has been shown to have as much claim to objective reality as matter has" (Tait), and yet "energy we know only as that which, in all natural phenomena, is continually passing from one portion of matter to another" (Clerk-Maxwell),[1] we must understand them as dealing in convenient figures of speech. As to the truth which is expressed in the former of these two statements, only thus much is either certain or intelligible. The only "claim to objective reality," which physical energy can show is to be found in our ideal interpretation of the observed or imagined changes in the relations of material things. On the other hand, the only "claim to objective reality" which matter has, depends upon things so manifesting themselves in our experience as that we are compelled to regard *them* as possessing and exercising force. That is to say, "matter" must show "force," in order to establish its claim to objective reality; but physical "force" is itself never shown apart from some kind of physical existence = "matter," in general. To

[1] Matter and Motion, p. 165.

speak then of our knowing energy *only* as it continually "passes from one portion of matter (thing, or constituent of a thing) to another," is to deny that we can know energy at all For energy can never be known, or even conceived of, as an objective reality capable of actual transference from one thing to another.

At this point it is necessary to call critical reflection back to the facts of cognitive experience. What the mind knows is simply this: (1) material things are constantly changing both their external relations to one another in space, and also the internal relations of their constituent parts; (2) these changes are measurable and comparable, by application of standards chosen for purposes of theoretical or practical convenience; and (3) the causes for these changes we are somehow compelled to find in the so-called "forces" belonging to the things. The general facts of experience may be expressed as follows: Of a number of physical beings, A, B, C, D, etc., existing together in time, their simultaneous or successive changes are observed to conform to some ideal principle, or formula, such as $x = A$. Y, or x varies as $\sqrt{y}$. The cause of this uniform, mutually dependent behavior of A, B, C, D, etc., is then declared to be found in their common possession of one (or one kind of) energy;—namely, Eg or Eh (energy due to gravitation, or energy that is called heat). And, next, the principle, or formula, is spoken as the law of that particular kind of energy (the formula, L, which is followed by Eg or Eh).

But, further, it is learned by experience that when the measurable changes in the internal condition or external relations of A are increased or diminished by a certain number of units of the standard, then corresponding changes increase or diminish in the internal condition or external relations of B—provided that A and B are the two bodies exclusively to be considered. What is true of A and B, is also true of A and C, of B and C, and of A and D, etc.; and

so on, until all the beings concerned (A, B, C, D, . . . N) are considered in all their possible inter-relations. Hence the warrant for that figure of speech which regards E as a gross amount of an entity called energy, that may be redistributed continually amongst A, B, C, D, etc., by being transmitted or passed over from one to another. The impossibility of any such actual transaction, however, follows from the very nature of force; and no meaning valid for reality can be given to any of the expressions that follow this figure of speech without referring back to the original experience to which the genesis of the entire conception of force has been traced. All that is observed by the senses is external to the true inner nature of things, regarded as centres of force; but we know what this inner nature is, whenever we have that living commerce with them in which our will-power is met, opposed, and overcomes or is vanquished, by the will-power which we, on account of this very experience attribute to them.

In this connection the fallacy of one assumption, — at any rate, *as an assumption* — which has clung to the science of physics with a strange pertinacity requires a brief notice. This assumption is the denial of *actio in distans*, as though it were impossible and even inconceivable as a qualification or potency of matter. When the mystery of gravitation was first discovered, it was natural enough to endeavor to lessen this mystery by explaining the so-called force of gravitation through some kind of impact. If enough little bodies could be imagined to hit the big bodies a sufficient number of energetic blows to the second, the former could give over into the possession of the latter a force sufficient to account for their influence upon one another through intervening space. Thus Newton, in a letter to Bentley,[1] declares it to be "inconceivable that inanimate brute matter should . . . affect other matter without mutual contact." "That one body,"

[1] See Newton's Works, ed. S. Horsley, vol. iv. p. 438.

he adds, "may act upon another at a distance through a vacuum without the medium of anything else," is "so great an absurdity that no man who has in philosophical matters a competent faculty of thinking, can ever fall into it." In accordance with the same views of the inconceivability of a true *actio in distans* we find Bernoulli [1] declaring the exercise of force without impact "revolting to minds accustomed to receiving no principle in physics save those which are incontestable." "There is," says Professor Challis [2] also, "no other kind of force than pressure by contact of one body with another." And not a few of the highest modern authorities have not hesitated to pronounce upon the *a priori* impossibility of the conception of the action of force without impact. "Gravity cannot act," boldly declares Mohr,[3] "except by the interposition of ponderable matter." "Forces acting through void space are inconceivable, nay absurd," says Du Bois-Reymond,[4] "and have become familiar concepts among physicists since Newton's time from a misapprehension of his doctrine and against his express warning." And the authors of the "Unseen Universe," [5] in plainest violation of the confidence which they might well have reposed in the title chosen for their treatise, affirm: "Of course the assumption of action at a distance may be made to account for anything; but it is impossible (as Newton has long pointed out in his celebrated letter to Bentley) for any one 'who has in philosophical matters a competent faculty of thinking' for a moment to admit the possibility of such action."

Now as to the question of fact — namely, whether the physical bodies of the universe do act, as it is figuratively said, "upon" one another, without coming into relations of contact — metaphysics is entirely ready to leave the observa-

[1] See the reference in Stallo, "Modern Physics," p. 55.
[2] Philos. Mag. 4th Series, vol. xxxi., p. 467.
[3] "Geschichte der Erde," Appendix, p. 512.
[4] Ueber die Grenzen des Naturerkennens, p. 20.
[5] Ibid., 3d ed., p. 100 (Stewart and Tait).

tions of physicists to decide. And here two conceptions of matter (to which reference will be made later on) have for a long time contested, and perhaps will always continue to contest the field. These are the conception of matter as consisting of masses, or elements, set in an empty medium of space, and the conception of matter as a completely space-filling *continuum*. Now there is nothing in the nature of the conception of force which enables us to choose between these two conceptions; and both of them leave the nature of force, considered as the substantial cause of the changes which go on in the configurations and spatial relations of material masses, equally mysterious, equally natural, simple, and intelligible. But if we are driven to a choice on *a priori* grounds between the two, we may well declare that offhand denials of the possibility of *actio in distans* are, of all forms of assumption, the most childishly anthropomorphic. Indeed, the only solid ground afforded for these denials is the fact that we, bodily selves, cannot determine changes in not-selves, in things external to the body, unless we get some bodily organ so close to the things that we can feel their pressure without readily seeing between it and them. This is what impact means to the senses. And, indeed, one of these authorities in physics rests his objections upon this very ground. Professor Challis expressly insists that since, only when we have come into actual contact with a thing, do "we feel in ourselves the power of causing motion by such pressure," and since "personal sensation" is the only "basis of scientific knowledge," we are forbidden to admit that any mode of moving one body by another is possible except that of contact and pressure.

But in answer to those physicists who claim the inconceivability of *actio in distans*, the objections from psychology and philosophy are numerous and complete. Pressure-feeling is, of itself, no more translatable into *immanent* or *transeunt* force than is another kind of feeling. The apparent contact

of the bodily organ with the thing it presses upon is not actual contact. Neither it nor any other two things or minute subdivisions of things, are ever known by the senses to come into actual contact; and the mystery of influence over the minutest amount of space is essentially as great as that of influence over millions of miles of space. Moreover, *actio in distans* cannot be conceived of as the traversing, by an entity called force, of either the smaller or the larger distance; for there is really no such transaction as the actual passing of force from one body to another. Such a passing — no matter how close the contact — is the inconceivable thing, and not the figuratively so-called *actio in distans*. And, indeed, the idea that "a body cannot act where it is not," is the relic of mediæval metaphysics in the domain of modern physics.

But the one demand which the philosophical mind makes upon the conception of force is that it shall serve actually to unite the varied changes in the different bodies of the physical world into the Unity of a System. It was this demand which Newton felt, as the very passage cited so often by his followers explicitly shows. For this passage ends with the significant declaration: "Gravity must be caused by an agent acting constantly according to certain laws" (that is, in a legal and ideal way); "but whether this agent is material or immaterial I have left to the consideration of my readers." Now since all force is essentially "immaterial," in the meaning in which Newton uses this word, and yet is immanently connected with the very being of all so-called material things, one may guess without long-continued hesitation what view of the truth this master in physics felt himself compelled to take. Force, which is = cause of changes of motion, *is* an immaterial agent, but present in all material things; otherwise these things would be "inanimate brute matter" — to use Newton's own significant words.

The modern physical principle of the conservation and correlation of energy, and the claim that the quantum of such energy in the universe is unchanging, summarizes a vast amount of observation and carefully framed theory. The propositions and assumptions which enter into this theory are worthy of careful examination by the student of systematic metaphysics; but their complete truthfulness in fact, or the satisfactoriness of the theory, does not alter the nature or the validity of his conception of Force. The theory, however, requires one distinction which is of no little interest and importance. This is the distinction between "kinetic" energy and "potential" energy; or between energy which is measurable as observable changes in the external relations or internal conditions of bodies, and energy which is imagined to be located in these bodies by virtue of their relations of position or their statical condition of strain, tension, etc. In the one case we have the conception of energy that is actually "doing work" by producing changes of velocity in the masses or the constituents of the masses, of physical bodies; in the other case, we are asked to imagine an energy which is liable to be "set free" for the actual doing of work by some change in the mutual configuration of the bodies of the system in which it resides. Of course the language employed by this distinction is highly figurative. That *energy*, which is something essentially perceivable and measurable as a product of mass and velocity, or units of motion in units of time, should be spoken of as "potential" or "stored," carries our reflection back to the psychological origin and metaphysical signifiance of the conception of Force.

Most instructive, therefore, is it to take the ideas involved in the distinction between potential energy and kinetic energy before our naïve and unscientific experience with things. In this experience we note the significant fact that one often seems to one's self to be exercising, or suffer-

ing from, no small amount of force, without any notable change by way of motion marking the result. This would have been the case with me at the instant when I was lifting hard at the stone and the stone had not yet begun to move. I should then have known myself as in a condition of "stress" or "strain," — that is, as possessed of energy not yet made effective as a cause of actual motion. The not-self-object, the stone, would also have been thought of as liable to prove too strong for me. It will perhaps continue to cling to the ground; or when raised a little way, it will move backward toward the ground, in defiance of my utmost force.

Moreover, the advantages and disadvantages of "position," as respects the effects of the ordinary exercise of so-called force, are perfectly well known by every observing man. For the stone *can* show me its inherent force in a much more convincing way when it is placed upon my foot; or particularly when it falls upon me from a considerable height. Again, if I throw it from my hand, it drops to the ground at a more or less remote point according as I put more or less of my force into the throw. Or if I wish to avail myself of the weight of the stone, or of a hammer, to accomplish work, the higher the lift of the implement, the greater the amount of work done by the blow.

What is thus crude and inaccurate in every man's work-a-day knowledge, physical science renders refined, accurate, and statable in terms of definite formulas. But it does not in the least change man's conception of what can *really* be meant by the "storing" of energy, or by the "potency" which things have exclusively in virtue of their advantageous positions; or by the "conversion" of a kind of energy that is not actually doing work into an energy which is actually at work, as soon as the favoring circumstances are found. Inasmuch as it taxes the imagination to picture non-self-like things in the possession of that of which they show no signs;

inasmuch, too, as more careful observation frequently reveals an indefinite number of minute movements, hitherto unsuspected, going on in such things; the tendency of physical theory is toward the assumption that so-called potential energy is never really non-kinetic. "Potential energy," says Tait, "must in some way depend upon motion." If this assumption could be verified in all cases to perfection, then the sum of the squares of the velocity of every portion of matter, multiplied by its mass, would be a constant quantity. Then apparent losses of energy would be only apparent. And this is precisely what Leibnitz[1] — although somewhat crudely — conceived to be true, in the example of two non-elastic bodies, when encountering each other. They become, he thinks, "agitated interiorly" with an amount of motion which shows that there has been no real loss of their active forces. The physicist Huygens,[2] asserted the same opinion, as follows: "The quantity of movement which bodies have cannot be increased or diminished by their encountering each other; but it always remains the same quantity in the same direction (*vers la même côté*), after subtracting the quantity of movement in the opposite direction."

It is, indeed, only as an abstract and *a priori* principle of phoronomics that the modern theory of the conservation and correlation of energy can be pronounced to be demonstrative or even of universal applicability. As a formula explanatory of the real facts of experience it is a presupposition in which a number of the fundamental dynamical conceptions of physics are united[3]; it is not workable at all without admitting the somewhat obscure metaphysical distinction between actual energy and potential energy; it has hitherto been proved, as an empirical rule, only within a somewhat

[1] "Comp. Opera," ed. Erdmann, p. 775."

[2] Article, "On the History of Force," by Dr. C. K. Akin: "Phil. Mag." 4th Series, vol. xxviii., p. 470 f.

[3] Comp. Wundt, "System der Philosophie," p. 467 (*Phoronomische und dynamische Principien*).

narrow range of observation; and it is available for purposes of prediction (that last test of the scientific character of any principle) only in a certain still more narrow class of cases.

The clearest picture of a case to which the theory of the conservation and correlation of physical energy incontestably applies may be gained in somewhat the following way: Let us suppose a number of bodies — A, B, C, D, . . . N — the aggregate sum of whose capacity for doing work = X, if both their energies of motion and also their energies of position, as due to the amounts of attractions and repulsions belonging to their relations in space, be taken into the account in calculating X. Then, so long as this system of bodies is considered in a merely quantitative way, and as uninfluenced from outside itself, the energy of the total system will be neither increased nor diminished. The energy distributed among the different bodies of the system, regarded as either the actual or the potential changes in their external relations and internal conditions, will be a constant quantity. The energy of A, B, C, D, . . . N, will remain = X. To employ the terse language of Professor Tyndall, on the supposition that the "system" dealt with includes all the bodies of the universe, we may say: "The whole stock of energy or working power in the world consists of attractions, repulsions, and motions;" — add *configurations*, and this stock is a constant quantity.

Now it is to be observed that, when the principle of the conservation and correlation of energy is stated even in this most abstract manner, the statement implies a number of assumptions which can never be completely verified by human experience; that any concrete application of the principle to a particular system of bodies requires data which only experience can furnish; and that any actual application may possibly modify the conception of the principle itself, in a very material way. For, in order to work the theory, it is assumed that the exact amount of energy stored in each

mass, and in each molecule or atom, of the bodies belonging to the system, by virtue of all its relations to every other mass, molecule, and atom, is already known. It is also assumed that the system must be regarded as uninfluenced from outside of itself. As a matter of fact, man has no knowledge of any such system; and he can never, from the very nature of his experience with things, obtain a knowledge of any such system. For example, it is possible to consider for theoretical purposes some of the motions of the bodies of the planetary system as belonging to a closed system. But the movements which the entire system performs, as it accompanies the sun on its ceaseless journey into unknown spaces, are to be explained, if at all, by influences, from outside itself. And whether the whole universe is receiving additions from, or making losses to "the outside," can never be known, because our calculations can never include the *whole* universe; not to speak of "stocks" of energy outside of all existing physical bodies — possibly in some "immaterial agent," such as Newton felt the need of in order to transmit and distribute the force of gravitation.

The principle of the conservation and correlation of energy also assumes that the system to which it is applied may be considered in a *merely* quantitative way, at least so far as its power for doing work is concerned. But the principle of the "conservation" of energy, as a constant and unchangeable quantity, is not workable as an explanation of the facts of human experience, until it is united with the principle of the "correlation" of energy. That is to say, Nature must be at liberty to change the kind of energy she employs, or she cannot agree to keep her stock unchangeable in quantity. Or, to quote from Clerk-Maxwell: "The total energy of any body or system of bodies is a quantity which can neither be increased nor diminished by any mutual action of these bodies, though *it may be transformed into any one of the forms of which energy is susceptible*" (the italics are ours).

Thus this mysterious big X, which the physical theory of energy would like to render manageable by considering it as a gross quantity (X when it becomes kinetic energy, or Force actually doing work — no matter about its kind $= \Sigma \frac{1}{2} M V^2$) becomes, *as soon as the theory is applied to actual things*, an indefinite storehouse of Force that differentiates itself into kinds according to the native preferences, or repulsions, which the different elements and masses have for one another. And so far as we now know, every little x (as for example, the molecules in a crystal, or the atoms in a chemical compound, or the molecules and atoms in a living cell) has a somewhat peculiar set of "laws" in control of the precise items of work done within its system.

It becomes necessary, then, in order to give a valid empirical basis to the view that the amount of energy in the world is kept constant (or "conserved"), that we should know precisely on what numerical terms — so to speak — any gross amount is converted into different so-called kinds of energy. These are the terms of agreement, or "correlation," amongst the different ways which the different beings of the world have, of doing their different kinds of work. Now modern physics has made some notable, but not a large, progress in reducing to approximately accurate formulas the quantitative relations which are uniformly maintained between the different kinds of physical energy. Its success has been most marked as respects the correlations of the energy of moving masses with the molecular energy called "heat." In respect of the mathematical theory of light, of electricity, and of magnetism, it has put forth commendable efforts definitely to correlate the kinds of energy connected with these phenomena, with one another, and with the energy of heat and of gravitation. In carrying out these efforts it has felt itself compelled to assume the existence of another kind of being, called "ether," which is in some respects astonishingly unlike that kind of being which is

known through the senses and is called "matter." Even by the help of this assumption, however, it is still far from a successful inductive proof for the necessary and universal character of the principle of the conservation and correlation of energy. Ordinary, "brute and inanimate matter," when considered as constituted out of some seventy different kinds of elements, as these constituents enter into the indefinitely manifold relations of which they are capable, shows itself capable of doing very manifold amounts and kinds of actual work. The facts of chemistry, inorganic and organic, and especially physiological, are at present so fast outstripping the merely quantitative explanations offered by physical theory, that to assert the undoubted applicability of this principle to all these facts is seemingly to anticipate by centuries the needed empirical proofs.

It is not, however, for the purpose of contesting the theory of energy held by modern physics that the above remarks have been made. We wish only to call attention back to the actual picture of the physical world with which man's trustworthy knowledge presents him, and to the real and valid meaning of those figures of speech which physical science employs in stating its own principles. The "energy" displayed by the world of things is, of course, not really an entity which can be "stocked" and "distributed," "conserved" as a lump sum and "correlated" with itself as it takes on a variety of different kinds. The truth of fact is simply this: the physical bodies known to us behave in such a manner that if we are at liberty to regard them *merely* as vehicles of energy, we can partially explain this behavior in terms of mathematical formulas. This mode of explanation, however, is and must forever remain exceedingly "partial."

For mathematical formulas never in themselves furnish the complete and satisfactory explanation of the behavior of things, with reference to one another. And — truth to say — no mathematical formulas for the behavior of things, ex-

pressed in terms of a common cause, are obtainable in the great majority of observed cases. Yet those relations of things, in which no known formula will comprise, even in a figurative way, the quantitative terms on which the relations are uniformly established, are among the most important and universal.

So far as we at present know, much of the behavior of physical bodies is dependent upon the "natures" of some seventy different kinds of elements, which, when they are brought sufficiently close to one another in space, combine in an indefinite variety of ways — though always in obedience to certain laws of number and under uniform conditions. Thus combining, these elements exhibit ever new and surprising physical qualities. And if they can be "influenced" to combine in yet more complicated ways, by some already existing arrangement such as belongs to the living cell, the same elements will do yet more marvellous things. Mere energy, — if such a thing as "mere" energy were conceivable, — quantitatively distributed and having its law given in terms of the amounts belonging here or there, goes only a little way toward explaining this infinite variety to the behavior of things.

Illustrations of this necessity which experience imposes, for considering physical energy as differentiating its locality and the character of its work *according to other ideas than those of mere quantity*, might be multiplied to any extent. It is in the field of the new chemistry of explosives that we are just now obtaining the most impressive, near-at-hand exhibitions of physical energy. But such phenomena cannot be explained in accordance with the principle of the conservation and correlation of a gross amount of energy, without an added special regard to the specific natures and relations of the beings that display the energy. That is to say, the energy "developed" by the explosion (to use a more appropriate figure of speech), cannot, previous to the transaction

itself, be said to be stored in the beings that engage in the transaction; neither is such energy kinetic so far as anything is known about the internal movements of these beings. To illustrate by a single example: Certain compounds of Nitrogen, Hydrogen, and Chlorine (as NH_2Cl and $NHCl_2$), are explosives; while perhaps the most astonishingly explosive of all compounds is that of Nitrogen and Chlorine, NCl_3. Now Nitrogen and Hydrogen get along comfortably enough together, and so do Chlorine and Hydrogen; as in the case of NH_3, or HCl, and other compounds of Chlorine, — all of which are eminently stable and "safe." But the discovery of the explosive character of NCl_3 was so dangerous an affair that it quite wrecked the health of the chemist who made it, through the state of constant anxiety in which he was kept by his investigations.

Now we do not give any adequate explanation of the tremendous energy displayed by NCl_3 when we merely speak of it as "stored" either in the N or in the Cl; or when we declare it to have been "put into" either of them by effecting this combination as NCl_3. The ultimate fact appears to be simply this; somehow the *natures* of N and of Cl are such that, when they are for the time being united, they easily part company, and develop, in the act of parting and reunion, an enormous amount of energy. This idea, or rational explanation of this complex resultant of the nature of N, of the nature of Cl, and of the natures of both in their relations to each and to the other elements with which they unite on leaving each other, is concealed by chemical science under the figurative expression, — "chemical affinities." But affinities are never *mere* forces; they are neither simple qualities nor compound qualities that can be distributed ever anew with only due regard to the *amount* of energy distributed. "Affinities" is a word which stands for *forces that have preferences.* Affinities are exercised by beings that have, belonging to them, immanent ideas in control of the forces; and these ideas

dictate to the forces the terms on which they shall do their specific amounts and kinds of work. And without all this equipment of immanent ideas, the behavior of things, chemically considered, cannot be understood or explained.

Another illustration of this important metaphysical truth may be found in the behavior of every living cell as it appears under the microscope, and when considered from the modern chemico-physiological points of view. From the moment when the cell is quickened (we will suppose it to be an egg of the human species), it begins a most mysterious process of internal, molecular differentiation. In this work of differentiation certain elements from the male combine with elements from the female. Much more intricate and unmathematical than the behavior of the molecules in the formation of a crystal of any particular type is the behavior of the elements which have entered into this dual combination. By the well-known processes of growth of the individual cell, of fission, proliferation, aggregation, segregation, etc., with the most marvellous display of industry and ingenuity in overcoming difficulties and in handling new material, these accumulating cells build up the finished structure of the human body. And now the most highly differentiated, supremely intricate, and consumingly interesting of molecular mechanisms is completed. The completed structure is scientifically considered as the resultant of constructive forces resident in the elements out of which this particular body — the human body — is built. Here again, however, it must be remembered that, to speak in terms of reality, no one entity of a force can be said either to reside in the entire structure or to be distributed amongst its millions of different parts. How then can the conception which regards energy simply as a *lump sum*, offering a quantitative problem to mathematics, account for the actual facts of experience?

But what, finally, is the significance for a Theory of Real-

ity which is lent by a critical discussion of the category of force? It seems to us that this question may be partially and approximately answered in somewhat the following way. In the first place, no rational mind is satisfied with that representation of the actual physical world which regards it merely as a succession of phenomena of the sensuous order, connected together by imaginary links of hypothetical phenomena. Physical science discloses a real world, where the ceaseless play (or work) of mighty forces must be invoked in the interests of rational explanation. These forces actually belong to the different physical beings of this world considered as a total system; whether these beings are simply considered as masses, or as molecules and atoms; and whether the forces are considered as the causes of actual changes in the external relations and internal conditions of things, or as potencies making possible such changes when the circumstances set free (or set "at work") the forces. But the changes actually effected, and the terms on which we may predict changes to take place in the future, are such that an ideal unity is obvious in this world of many beings with their multiform forces.

Lotze has well said: "We are only doing honor to a ghost when we dream of an absolutely nameless primitive force which, formless in itself and consisting of an unnamed number of constant amount, assumes as a trifling addition that needs no explanation the changing names under which it is manifested." Within certain limits, indeed, the unity of the forces may be figuratively regarded as a constant sum, — a quantity of One Force which somehow gets stored in the different beings of the world, or passed over from one to another of them. But even thus we are compelled to recognize varied forms of relation; several kinds of force, and many ways employed by the different beings, of displaying and developing their peculiarities of force. The world becomes thereby a much higher and richer kind of unity. Indeed,

the bewildering complexity of the relations, and the newness of the phenomena which the progress of science discovers, bear some direct relation to the advancing high character of that unity which our thought ascribes to this complexity. When the Being of the World is regarded from the point of view of its substantial causality, it appears as a Unity of Force that differentiates itself, in respect of kinds and relations, so as to produce a marvellous and bewildering complexity. Yet over all this complexity there rules so much of adherence to form and to law as that the result is a Unity of the World which is far more than a mere unity of force. *But this is to endow the World-Force with manifold controlling Ideas.*

Translated into terms of an indubitable experience, what is the Reality that corresponds to this description of the world in terms of force, and of the conservation and manifold correlation of physical energy? Every "moment" of this description is an unmistakable factor in the self-known Self of the knower. The description is the picture of a *Will, differentiating itself according to its preferences, under the control of forms and laws — or immanent Ideas.* Here, indeed, our theory anticipates itself somewhat; for the significance of so-called "forms and laws" in the world of concrete realities still awaits critical examination. But that forces which correlate themselves in kind and degree with one another, and which thus manage to construct a unity that is indescribably rich in variety, are significant of One Will, manifesting its immanent ideas in many ways while still retaining its own identity, there can be no manner of doubt. Or, if this be not true, the figures of speech employed by human science, as well as by man's ordinary knowledge of the world of things in terms of force, are without intelligible meaning. The movements of physical objects, like the gestures of the actor of a pantomime, reveal the Will and the Ideas behind; or else they reveal nothing at all.

In discussing the preceding categories the essence of the conception of Cause has been discovered. This conception is that of a being in action, when so related to another being, as that the action of the one is followed by changes in the external relations or internal condition of the other. Bluntly expressed, it is the conception of one being doing something to another being. Thus construed, its genesis and significance have already been, for the present, sufficiently explained. Even in this earlier and cruder form, the conception is complex. But the so-called "law of causation," together with the assumptions and thoughts entering into it, as these are held by the modern sciences of nature, is yet more complex. Ideas of quantity and of number, and especially the thought of a uniform and "self-consistent mode of behavior," enter into these more refined forms of this conception. Yet its roots, even in the most refined of its forms of application, are deep in the experience which has already been described as that of "being a substantial cause."

One's total experience with things, as consisting of observed changes both in one's self and in them, and of self-felt but inhibited activity, contains all the elements for an empirical apprehension of the causal relation. Indeed, this experience is best described as a knowledge of doing something to some other being, and also of having something done to one by that other being. The cognition is that of a commerce of beings which stand to each other in the relation of substantial causes. Beyond this neither scientific curiosity nor metaphysical analysis can take the mind of man. This experience of being a substantial cause under variously changing relations is itself, the rather, the experience out of which all man's scientific and metaphysical explanations are actually derived and without which human knowledge would not be what it actually is.

Philosophical theories of causality like those of Hume,

Kant, and Mill, as Romanes pointed out, run counter to, and are confuted by, the very objectivity of the causal relation which all the physical and natural sciences both assume as a fundamental principle of their procedure, and also constantly confirm by all their advance in power to predict and in discovery. Growth of experience along the lines of reflective thinking and under the guidance of the principle of sufficient reason is necessary in order to generate the complete conception of causation, — especially as this conception is employed in the higher stages of mental development. This growth is effected in the manner well described by Wundt[1]: "With the empirical apprehension of a causal relation there is, therefore, uniformly connected the demand that the same correspond to a logical relation; since the whole causal connection of nature is considered, under the presupposition of certain general principles and originally given facts, as a unitary, logical system of grounds and consequences." As we have elsewhere shown,[2] however, this "demand" is itself the complex and ever developing result of man's reflective interpretation of his collective experience. It consists in finding out the *rationale* of the behavior of things, with a growing persuasion which is more and more justified by accumulating experience, that things have a *rationale.* It is a finding out of the *mind* of things, as their mind is shown by their customary modes of behavior. In its last result, it is the strong and well fortified conviction that, somehow, things are all of one mind, since they manage to limit and to restrict one another without destroying each other completely; indeed, in some large and comprehensive way, things serve certain common ends, and so build up the unity of a world-system.

So indefinite and complex a conclusion as this involves, of course, several conceptions which still remain to be ex-

[1] System der Philosophie, p. 302.

[2] "The Principle of Sufficient Reason," "Philosophy of Knowledge," chap. x.

amined critically, before they take their place in a completed theory of reality. In closing the discussion of the category of Force, it is well to notice again carefully the relation, both in thought and in reality, of the moments which human thinking assigns to "substantiality" and to "causality," respectively. The substantial being of any thing is thought of as requiring some principle, belonging to it, that shall prevent the thing from going, in its changes, outside of a certain prescribed circle; or — what is the same conception — that shall compel the thing to change its states in a certain prescribed order (according to its so-called "nature," or immanent idea). Thus A *must* become only A_α, A_β, A_γ, A_δ . . . A_ν; or else it ceases to be the substance A. The causal activity and passivity of any being, however, — its standing in causal relations, — appears when any particular series of changes in A is regarded as dependently connected with another series of changes in some other being, B (as, for example, B_α, B_β, B_γ, B_δ, . . . B_ν). All such series of dependent changes, for their complete explanation or reference to the complex causes which account for them, require an answer to three connected problems. These concern, first, the nature of A; second, the nature of B; and, third, the relations at present maintaining themselves between A and B. But the only way approximately to solve two of these three problems is to discover the uniform modes of the behavior of both A and B; indeed, uniformity in the modes of behavior of any thing affords the only answer to an inquiry after the "nature," or the "essence" of that thing.

Now, finally, the thought recurs that neither A, nor B, nor any other being in the world, is ever known as behaving according to its own nature, without at the same time paying attention to the relations which it sustains to the nature of other beings. That is to say, man's growing knowledge of the world is a network of more or less clear and definite causal relations amongst the different beings of the

world. Viewed in its subjective aspect, this fact shows how the variety of otherwise disconnected and chaotic items of experience are constructed by the intellect into a system of interdependent changes in the external relations and internal conditions of its objects. In spite of the constant presence of many items of change which refuse to show the desired "uniformity of behavior," human science is growing firm in the conviction that this limitation belongs to our human points of view and human powers of cognition, and not to the nature of the objects themselves. *Viewed in its ontological aspect, all the growth of man's cognitive experience reveals the Being of the World as a Unity of Force, that is constantly distributing itself amongst the different beings of the world so as to bestow on them a temporary* quasi-*independence, while always keeping them in dependent inter-relations, for the realization of its own immanent ideas.*

CHAPTER XI

MEASURE AND QUANTITY

It is a well-grounded boast of the physical sciences that they are able to furnish an increasingly accurate knowledge of the nature and transactions of things. This ability they chiefly owe to their use of the arm of mathematics; by its aid they are constantly approximating more exact forms of statement, and are also conquering new fields of inquiry in accordance with the most approved scientific methods. For, — to recur to the symbolism employed at the close of the last chapter — whenever A and B are "causally related" (that is, are dependently connected as respects the changes they undergo), the complex problem they afford is solved only by stating the exact co-efficients, α, β, γ, δ, etc., for both A and B, and also the value of the X which defines the uniform conditions under which they display these coefficients. For example, the constitution of water from oxygen and hydrogen gases is *scientifically* established, when we know how much of O, and how much of H, must be made to act upon each other; and also under what definite relations this reciprocal action takes place. The more exact our measurement and enumeration of all the complex of changes which actually occur in the production of H_2O become, the more is our science glorified. Measuring and numbering belong, therefore, to the very essence of the method of physical science.

But measuring and numbering are mental activities and mental achievements; to measure and to number is, indeed,

a very large part of what it is to *know* — in a way to satisfy scientific demands. Physical science, as the knowledge of things and of their transactions, assumes it to be beyond question that things are actually measurable and numerable.

The marked success of the more definitively physical sciences has combined with other reasons to encourage the use of the mathematical method by other more or less closely allied sciences. Modern chemistry is distinguished from the alchemy out of which it grew, in no other way more obviously than by its devotion to the niceties of measurement and of counting. Its most universal "law," like the law of gravitation, is designed to serve as a general formula for reckoning those quantitative relations of things, in which the explanation of both their more obvious and their occult qualities must be found. To be sure, chemistry does not assume to tell us *why* NH_3 and HCl are safe, but NCl_3 is highly dangerous, except by referring to the "affinities" of N, H, and Cl, with one another and with other elements in the environment. Why these elements have such and no other affinities, our science is forced to regard as, at present, an unanswerable question. In general — to use another example — why H_2O have the affinities, so stable and manifoldly useful, which they exhibit in this combination; and why the physical properties of the compound are such as they actually are, etc. — these are questions which teleology, and not chemistry, chiefly essays to answer. Meantime, refinements of measuring and numbering are the delight and the boast of modern chemical science. And apparently the hope of her most advanced students is that she will some day take her place in this respect, among the most complete of the physical sciences.

It is also proposed to introduce to biology more exactness through an improved use of the mathematical method. Psychology, too, is showing a swelling ambition to take rank among the physical sciences, by use of their method for

counting and measuring the various psychoses and their elements. We have here something more than a renewal of Herbart's proud claim to constitute this as a natural science, "*neu gegründet auf Erfahrung, Metaphysik und Mathematik.*" For, in the "new psychology," the "Metaphysic" is to be left out, and the "Mathematic" is to be, not an *a priori* theory of combinations of the *Vorstellungen* on the positive and negative sides of a zero-point, but a collection of exact formulas solidly placed upon an inductive basis.

No conclusion, then, can be more certain than this; if things are not "by nature" and "in reality" measurable and numerable, modern science has little real truth to tell; it is in no essential way distinguishable from the merely logical arrangement of a system of pure mathematical conceptions. We have never held the opinion which refuses to such generalizations as cannot state themselves in terms of number and quantity all claim to the title "science"; nor do we for a moment believe that the numerable and measurable aspect of things is the only aspect open to the cognitive powers of man. Nature may, indeed, be made to step upon our scales and be weighed, or to stand up against our measuring rod and have it applied to her. But she is often coy about this; and she does not like to be admired simply as having so many pounds avoirdupois, or as being so many centimetres broad and long. Like the human Self, who constructs her in his own image, because he was at the first constructed in her image, Nature has an inner life, an æsthetical and spiritual meaning to reveal. On the other hand, the denial that things are somehow in reality what science with all its elaborate and refined quantitative estimates affirms them to be, invalidates this science and obscures one side of Nature. When Plato proclaimed God the great geometer, the philosopher was doubtless in some sort true to the inner being and meaning of the world; although

it does not follow that God is nothing other than a great geometer.

It is impossible even to talk about things, or to deal with them in the most essential and practical ways, without measuring and counting them. What our language thus emphasizes is not primarily the measuring and counting faculty of the mind, but the measurable and numerable nature of things. And, of course, every man's knowledge of, and intercourse with, his fellows, is dependent upon some sort of a conception as to the nature of unity, and as well upon some sort of recognition given to "another" as belonging to the same kind. Measuring and numbering of things are inseparably connected also with all distinctions between *meum* and *tuum*, and with all commercial values and commercial transactions. But there is little need to illustrate this fact of all human experience; without some sort of numbering and measuring knowledge itself is impossible, because no object is existent for knowledge. Cognition itself is essentially, though by no means exclusively, a process of numbering and measuring. In order, then, to understand these categories, the psychology of their genesis and development must show us on what mental activities and mental postulates they rest. But on the basis of such psychological analysis, metaphysical criticism must also try to discover what these categories reveal as to the real Being of the World. Here, then, are two allied problems to be solved: How is it that the human mind comes to measure and number the things of its universal experience with such confidence in the validity of these processes — the applicability of them to Reality? and, What sort of a Reality must that be to which the measuring and numbering activities of the human mind, in so far as these enter into all its experience with things, can be applied? The answer to the former of these two questions leads up to the answer of the latter. The answer of the latter is an integral part of a systematic metaphysics.

It is the concrete beings of the world, known as actually existent in space and time, that are measured and numbered. Quantity and number belong to these concrete beings as essential characteristics of their being at all, — to their qualities, their changes, and their relations, under all the manifold formal conditions of both the temporal and the spatial order. In speaking of things as possessed of different kinds and degrees of force, and in applying to them the principle of the conservation and correlation of energy, we are obliged either to employ or to imply the categories of quantity and of number. Particularly close is the relation between this pair of twin categories and the categories of space and time. All spatial measurement rests on the existence of time, — or, the rather, on the enduring existence "in time" of the thing that is measured. All estimate of extensive magnitudes is spatial measuring. Even *Perception* of motion, or of change in spatial relations, is impossible without an active measurement taking place. We can apprehend clearly neither quantitative spatial qualities nor spatial relations without applying some standard of measurement, and counting the number of the applications made in the mastery of the complete dimensions of the thing or of its distance from other things. All such apprehension of things and of their relations is, of necessity, subject to the formal categories of space and time.

From the obscurity and confusion of the dawn of knowledge, in the individual and in the race, emerge the twin conceptions, quantity and number, hand in hand. In the development of the majority of minds they never get far into the fields of a sun-clear and consistent system. But in certain minds, conceptions of quantity and number become so articulated and unfolded as to form a logical whole, unmatched by any other kind of human knowledge, for tenacity, clearness, and consistency. Such an evolution of "pure" mathematics is one of the most astonishing and sig-

nificant achievements of human reason. By the masters of this system the uninitiated are assured that their demonstrations of what *must be*, if only something else that is numerable and measurable be taken for granted, have a cogency which no rational mind can resist; and yet these demonstrations concern matters so unlike any entities or relations of ordinary experience that not fifty men on the face of the globe can even comprehend them. No one of us — writer or readers — alas! can hope to be of this privileged number. But, as students of metaphysics, we can ask: What has such a wonderful network of conceptions to tell us touching the Nature of Reality?

The psychological genesis and development of the conception of quantity, and the way that this conception is gained and grows by the activity of measuring, affords a most interesting and significant study.[1] A brief notice of several important points will suffice for the present purpose. The fundamental fact of experience involved in all such conceptions is this; there are variations in the "how-much" of our psychoses, and the intellect actively discriminates, associates, and compares the psychoses as regarded in this aspect of their change. That mental processes, as such, do vary quantitatively, is as primary and incontestable a fact of experience as is the other closely-related fact, that they vary in respect of content or complex quality. The view which regards all measurement as fundamentally applicable only to thing-objects, and as subsequently applied in a purely figurate way to psychoses, reverses the order of procedure in the evolution of mental life. These most primitive quantitative variations of sense-consciousness are probably, however, variations of intensity and not originally of "extensity" or "massiveness." But the admission of the claim put forward by some psychologists, that a sort of obscure and un-

[1] On this compare the monographs of Nichols, "The Psychology of Time," and "Number and Space."

measured "bigness" belongs, *natively*, to all modifications of sense-consciousness, would not change the bearing of this experience upon our metaphysics of quantity. The important point for a Theory of Reality to notice is this: the different pulses of that stream of consciousness we come to know as the Self do actually vary in the intensities belonging to them. The *life* of the Self does "in reality" rise and fall, increase and diminish, in the amount of that being which it, by the grasp of consciousness, knows itself to have. Otherwise expressed: *The Being of the World actually vouchsafes to you and to me, at different moments of our life in time, differing amounts of its own being.*

Furthermore, the mind is immediately aware of this variation in the intensities of its own psychoses. By activity of the same discriminating intellect by which we become aware of all changes in the stream of consciousness, we discern these alterations of intensity in the different temporal portions of this stream. This more primitive measurement is obscure and indefinite; it is only a vague awareness of more or less of the similar, when the present is compared with the just passing, or with the now expected, phase of consciousness. Long before the infant can "put its toe into the pain," it discovers and meets with characteristic expectation, or retrospect, the swelling or the subsiding of the pain. These changes of intensity are for it the important thing, and not the exact place in which to locate its pain. These varying "feeling-tones" which emphasize its interest in the waxing and waning of the pressure-sensations, or the sensations of sound or of light, furnish an attractive point of regard for the earliest discriminating activity.

It is not necessary to trace the steps of that psychological development by which the vague and indefinite quantitative measurement of closely approximate psychoses becomes a vague and indefinite measurement of the extension, the forces, and the spatial relations of things. The history of

these steps involves all of that marvellous and fundamentally inexplicable experience by which the mind obtains the clear knowledge of a world in which the Self exists as separate from, and yet related to, an environment of many self-like and non-self-like things. In all this history it is the growth of skill in discriminating the minutest differences of quantity in our own psychoses which fixes the limitations for all our actual measurements of real things. It is practice in such discrimination which guarantees my friend, the professor of physics, when he assures me that he can with unaided eye place a spider's web more exactly in the middle between two others than is possible by using any micrometrical instrument. When the physicist uses any instrument for measurement, what does he employ as the ultimate standard for his knowledge of relations of quantity? Only the same discriminating consciousness which, under the most favorable circumstances, can measure with amazing accuracy changes in its own phases,—quantitatively considered. For, as Volkmann admirably observes,[1] the magnitude of the subjective spatial series is not directly comparable with the magnitude of the object-thing; and our estimate of magnitude always becomes uncertain, just as soon as the opportunity to compare it with the familiar magnitudes belonging to our sensation-complexes is removed. Moreover, a great variety of changeable interests and forms of emotion furnish impulses, checks, and guides, in the development of all mental measurement and in the consequent conceptions of magnitude. *Psychologically considered, then, all actual measurement of real quantities consists in the self-appreciation of the varying amounts of the own-life of the Self.*

But in respect of this category of quantity as of all the other categories, the mind cannot persuade itself that the conception has a merely subjective origin and applicability. For here, as in all other use of human faculties, we speedily

[1] Lehrbuch der Psychologie, II., p. 99 f.

cease to regard the subjective changes as belonging to the known reality, and concentrate attention upon making gains of verifiable objective knowledge. How nicely can one distinguish differences of intensity in the sensations, under precisely such favorable or unfavorable circumstances? — this is a question for the psychological laboratory. The world of men will never come to take much interest in such a question for its own sake. But how much does this material shrink under so many degrees of cold? is the question of the builder of houses and bridges. What are the actual atomic weights of the different elements? is the inquiry of chemical science. It is the measurement of things, not of sensations, which is of most practical and theoretical importance in the estimate of men. Such measurement cannot be accomplished without reference to some objective standard; and the use of such an objective standard, with the assumptions and the arguments involved, with its temporary failures and its brilliant successes, is full of most important lessons for the metaphysician.

The first truth to be noticed in considering the nature of all objective measurement is this: such measurement is always an affair of relations; it is a relating activity on the mind's part, which implies, however, some sort of a correlation belonging to the real being and actual arrangement of the things measured. In its earlier forms this objective measurement is a vague and uncertain affair; it is chiefly adapted to, and enforced by, the simpler practical ends of life. The groping of the infant in its effort to discover the correct reach of the hand, which will bring to its grasp the coveted object, is an example in place here. In all its developing experience with things, the child's mind is "sizing them up" — if such a phrase may be pardoned; it is discovering whether they will fit its mouth, fill its hand, inclose or match one another; and how far one must creep or walk to obtain possession of them. So far as these more

primitive measurements are accomplished by the eye, there is comparatively little *motif* to introduce the conception of force as the "stuff" which is being measured. But with the knowledge of things that comes through the tactual, muscular, and joint sensations, the case is not the same. In these ways the infantile physicist is constantly measuring his force against the resisting or the active forces of things. Every time he throws a stone or a ball, or wrestles with his playfellow, he gets a new lesson in popular dynamics. And few things are of more vital interest to him than the correctness of his calculation of the amounts of forces which nature has assigned to the different objects of his daily experience. Thus his quantitative calculations become surprisingly exact, whenever the problem concerns merely somewhat indefinite increase or diminution in the amounts of the things in which he is interested. This fact of experience corresponds with the well-known psycho-physical law which controls the mind's appreciation of the varying quantities of sensation-consciousness, the use of mental images of past sensations as standards of measurement, and the conditions which favor or hinder the exactness of such appreciation in particular instances. Great sensitiveness in these more primitive quantitative estimates, in the case of children and of savages, for a long time precedes the self-conscious and rational affair of learning to count.

Let it be noticed, also, what are the things that are measured — the existent "that-which," to which the measuring process is thus naïvely applied. That which is thus measured is threefold. It is, first, the extension of things — their size, as relative to one another and to our purposes regarding them; second, it is the distance of things, as relative to us (*where we are*) and to one another, and as bearing upon the actual or expected relations existing amongst them, and between us and them; third, it is the forces of things, as the hidden causes of the actual or expected changes of

these relations. The empirical basis for the doctrine of geometry and of mass comes from the first and second of the three; the theory of dynamics and the law of the conservation and correlation of energy, comes from the third. But all three forms of measurement are bound together and, as it were, made available for both practical and theoretical purposes by the universal fact of motion. Psychologically considered, it is only with *moving* organs that we measure; active measuring *is* a function which requires the entire self, — imagination, intellect, feeling, will, — dominating and guiding the organism under the impulse to secure certain ends. Were you and I not real beings, organically somehow connected with the changing texture of the universe of being, so as both to change it and to be changed by it, we should never "measure" ourselves or other things. Geometry, physics, etc., — all measurement is born as the child of a mind that is in living commerce with things. "The limits of space," it has been well said, "are for us simply the limits of possible motion of a material body."[1] This space of three dimensions, in which all actual known motions occur, and all conceivable motions must be imagined, is that in which the axioms of the Euclidean plane geometry, as popularly conceived of, are true. It is our experience with this actual complex differentiation of reality in which our conceptions of measure and quantity are matured.

Such vague and unchecked measurement as has just been described does not, however, form a satisfactory basis for a true quantitative *science* of things. Although it must not be forgotten that nine-tenths of man's actual cognitive experience with things — their sizes, distances, weights, forces, and whatever belonging to them is measurable — is of this vague and unrecorded sort. Yet how accurate it can be trained to be; every letter-sorter on the flying mail-car,

[1] See the Presidential Address of Professor Simon Newcomb, Bulletin of the Am. Mathematical Society, 2d Series, vol. iv. No. 5.

every skilled huntsman, or expert ball-player, demonstrates as truly as does the physicist with his superb and justifiable confidence in his unaided visual discriminations. Nor must it be forgotten that a very subtle and profound theory of *rational* correlation between the Self and Things, with an assumed uniformity in obedience to law, and a steady conformity to ideal ends on the part of both is implied in this natural use of the category of quantity.

It has been said that all measurement is relative. Now "the relative" implies the existence of a standard and its application to a number of objects. In the more primitive forms of measurement the standard is some mental image, revivable — so it is assumed — in a fairly constant way. But the more purely subjective means are found to be, as might be expected, variable and deceptive; and although they may be rendered exceedingly accurate and serviceable for certain individualistic and special kinds of practice, they are not trustworthy as commonly accepted standards for human intercourse. Nor will subjective standards do at all as a foundation on which to erect the superstructure of mathematical and physical science. The physicist can handle his spider-webs better without than with the use of a rule marked off in fractions of millimetres, but he cannot be trusted as a sorter of letters; and neither he nor the mail agent is willing to purchase his ell of cloth by having it measured on the dealer's arm. Hence the necessity for accepted and trustworthy objective standards. The history of the rise, adoption, and perfection of such standards of relative quantity is very instructive; but it is not necessary to our argument that we should follow it.

A speculative question arises at this point which is of some interest to a metaphysical discussion of the category of quantity. This question is not infrequently proposed by physicists in the interests of the accuracy and constancy of their own results. The standard of measurement which they have

adopted is the calculated length of a selected great circle of the earth. But the size of the earth is undoubtedly slowly changing; and with it, of course, must go on a change in the standard adopted for all physical measurements. In case, then, an appeal to experience is made at any time for correcting this standard, all sizes and distances, as measured by this standard, will have to change in relation to it, if they themselves remain constant quantities. But in such a case these changes of relation, when taken to the standard, would reveal themselves; and thus warned, we should be enabled to know as to *what* had really changed, and as to the proportions in which the observed changes in relation should be distributed amongst the different things. For example, we should know whether the reason why the distance from the sun to the earth was now measured by fewer kilometers than formerly was to be found in the fact that the kilometer had grown relatively longer, or in the fact that the earth and sun had drawn nearer together. Let it be supposed, however, that all things in the universe, so far as they come under human observation, including the bodies of men and the intensities of sensations in the flowing stream of consciousness, are changing their quantity in the same direction, but with such nice continuance of the adjustment amongst their long-established and well-known relations that no change in the relations themselves is observable. The real universe would then be actually growing smaller and smaller, indeed; it would be shrinking to the size of a nutshell; but all things in the universe would retain the same relative sizes, distances, etc. How should we know that such startling changes in the Nature of Reality were actually taking place? How do we know that this is not what is now taking place?

In answer to such puzzles as the foregoing, three observations are of interest from the metaphysical point of view. In the first place, all measurement of things is conducted under conditions set to man's mental representation of the

world as a system of concrete existences in time and space. The application of every standard, as well as the constitution of the standard itself, belongs to his mental "picture" of the world. Now, inasmuch as this mental picture, considered space-wise, is no mere photograph or express copy of the trans-subjective, *all that it is essential for the Reality to be, and to do, is included in the continuance of the relations in such manner as to realize in things its own immanent ideas.* For, of course, measurement of things, their temporal and spatial qualities and relations, as well as their manifold seizures and losses of the One all-pervading Force, is necessarily a *relative* affair. Subjectively considered, measurement is relating. Absolute size, absolute distance, or bulk, or force, as applied to particular things, has no meaning. All objective measurement of the world as it appears to us, in its time-form and space-form, is also, in its very essence, relative. But, second: the relativity of all man's use of the category of quantity does not diminish, but rather increases, the necessity for placing this very relativity — considered both as fact and as a network of laws or uniform ways of relating and being related — upon a trans-subjective ground. There must be something in the constitution and behavior of things, that makes them relatable in terms of a standard common to all; and this, in spite of the constant and infinite processes of change that are going on in these relations. Whether certain particular things are swelling and others shrinking, and this in such a way as to preserve some constant standard of measurement, or not, does not essentially affect our valid conclusions as to the inner and the constant nature of Reality. And, third: in being known as measurable at all, the World reveals itself as a rational totality, a system of beings actually conforming in all the varied changes of their measurable and calculable relations to ideal forms. In this way the objects of man's cognitive experience are made to constitute an ideal Unity, which comprises

an infinite variety of different beings that are comparable and capable of being known as quantitatively related in the mind's pictorial representation of things.

This third and most important tenet of the metaphysics of quantity is made clearer, more forceful, and comprehensive, by a study of the "science" of measurement and of spatial relations, as such. In the development of this science the most important psychical activities are the imagination to construct the points of departure, and the logic which connects together into chains of demonstration the abstract ideas thus obtained. If these ideas are more directly gathered from our sensuous experience with concrete things under the limitations of the space-picturing imagination, and are placed in their simplest relations to one another, we have the so-called "axioms" of the Euclidean geometry (comp. p. 304). The demonstrations of this geometry then follow in a logical way, with the constant possibility of an appeal to experience for their illustration and verification by a process of progressive approximation to an absolute exactness. But when these ideas are converted into pure abstractions, the different possible relations of these abstract conceptions become the so-called "postulates" of the modern geometry.

The demand of the Euclidean geometry is that we should envisage the simplest conditions of our mental picture of spatial relations and see that the thing is so. This envisagement will make the several fundamental propositions "self-evident," — a small collection of axioms; because the mind cannot help seeing that such are the relations which exist between the different elements of its space-picture of the world. Such so-called "axioms," however, have no self-evidencing power, if the attempt is made to apply them to the relations of real beings considered independently of this pictorial representation. But the modern geometry, in its theory of measurement, strives to free itself from all sensuous conditions. Its points of starting are, therefore, *postu-*

lated rather than deemed axiomatic in the sense of the latter word which is assumed to be true for the fundamental principles of the Euclidean geometry. Choosing freely its postulates, the purely abstract science then proceeds to construct a logical system of conclusions, all of which state those relations between certain abstract conceptions which follow necessarily from the postulates chosen as points of starting. The Euclidean geometry assumes that the relations actually existing amongst the different spatial "moments" of reality are, of necessity, precisely similar to man's pictorial representation of the world in space. It is the geometry of the senses and of the sensuous imagination; it is that "pure" science of space relations which can be taught to the common-sense consciousness. Its "purity" consists in its freedom from the *particular* limitations of the sensuous imagination, the "figurate conception" of the spatial relations and spatial qualities of things. But Kant was justified in pointing out that it is *a priori* only for our "æsthetical" experience. It does not, of itself, tell us anything as to the inner nature of the trans-subjective ground on which its own pictorial representation reposes. The modern geometry, on the other hand, makes no claim to demonstrate what the spatial qualities and spatial relations of real things *must be;* and it does not ask to have its fundamental postulates verified as self-evident in terms of figurate conception. It says: "Come, let us make all sorts of assumptions as to the values of x and y, in our setting forth of hypothetical space-relations; let us give ourselves all manner of subtle and fascinating problems for solution on the basis of a choice among these assumptions; and then let us see where strict logical argumentation will bring us out in conclusion." The pertinent and important metaphysical truth is this: *Both the Euclidean and the modern geometry assume the significant principle that the Reality which manifests itself within, and to, the mind of man, in its actively measuring and reasoning, is*

itself constructed as a logical, rational, and Self-consistent System.

None of the "self-evident" propositions on which the ordinary geometry founds its system of demonstrations are "synthetic judgments" *a priori*, in the meaning given by Kant to those words. The predicate in these propositions does not add something wholly new to the subject; nor is the genesis of the judgment, or the mind's confidence in it, independent of all concrete experience with actual objects. On the contrary, the office of the judgment itself is to pronounce the result of our intuition of the space qualities and space relations of the things known by sense-perception, after these qualities and relations have been subjected to the refinements of imagination and intellect; and this result is stated by the judgment in the form of an identical and self-consistent proposition.

The clearness, cogency, and consistency, of that system of connected propositions which can be made to follow from the so-called axiomatic points of starting adopted by the Euclidean geometry, is due to the nature of the material with which the logical faculties have to deal. This material is composed of a certain number of conceptions whose marks are perfectly apprehensible and definitely capable of being separated from all those interdependent conditions which determine the complex changes of actual things. Relations of real things are infinitely complicated, and they cross each other in an indefinite number of ways; actual relations are a tangled network of relations. This is true of every simplest and meanest thing, and of every most common and insignificant transaction between things. Every "Thing" is a concrete realization of all the categories; it partakes of the whole throbbing and striving life of nature; and every transaction between things is an epitome of the history of the universe. But the spatial qualities and spatial relations of things are themselves related, and these relations between

the spatial qualities and spatial relations of things are totally different in respect of the problems they propose. They constitute the science of "space" (or geometry), which thus differs essentially from every form of applied science; *its* complications are matters not of observed fact but of logical arrangement mainly. For example, no biologist can even make a beginning toward expounding the demonstrative science of a single amœba; but if this science could be completely expounded by one gifted with the power of clear description, we might all hope to understand it. There are, however, huge volumes which contain the demonstrative science of certain systems of space relations; and the fundamental conceptions of these volumes we could all understand, but few there be that can understand the complexity of the arguments employed in arranging these conceptions. Yet the forms of argument which all geometrical treatises employ are taken from the fundamental rules of reasoning, as these rules apply to every kind of material which the intellect of man can make the subject of argument.

The "geometrical axioms," then, which furnish the points for the departure of all the trains of reasoning employed, are special and are derived from the nature of things viewed as having space qualities and as existing in space relations merely. But the "general axioms" of geometry are such as belong to all use of the reasoning faculty. The possibility of a science either "pure" or applied, by combination of the two forms of axioms enforces anew the same ontological principle: *The mental representation of things in space is indeed subjective and relative; but its subjectivity reposes upon the trans-subjective Ground of an ideal and rational Nature which belongs to the entire system of things.*

The true metaphysical doctrine of the measurement of space, with its resulting doctrine of quantity as applied to realities, may fitly be illustrated by one or two examples. Let, first, the so-called axiom concerning the properties of

straight lines be examined from our point of view. If the old-fashioned way of bringing to notice this so-called self-evident proposition be adopted, the judgment certainly appears to be neither synthetic nor *a priori* in the Kantian sense. For the proposition that "a straight line is the shortest distance between any two points" is, undoubtedly, a purely analytic or identical proposition. What is meant by the act of sense-perception, or of sensuous imagination, which enables us to intuit or to construct a straight line, is precisely this, — a line so perceived or imagined that it runs by the shortest path, and without the least bit of turning out, from one point to another in space. "Draw me a straight line from *a* to *b*" means nothing else than this: — proceed with your chalk, or pencil, or with your imaginary moving point, *directly* from *a* to *b*. In general, the idea of the shortest path is identical with the idea of the straight path. And "straight-line" = in quantity "shortest-line," is only another way of saying that a straight line *is*, when considered quantitatively, and compared with all other lines, the shortest of them all.

Moreover, when the effort is made to test this so-called axiom, we see not only that both of its terms express the same idea, but also that neither the subject nor the predicate of the judgment can be represented in idea, without the mind's relating activity at once connecting the two under the form of identity. For the idea of a "*straight* line" has no content except by comparison with lines that are *not straight;* and beyond doubt, the "*shortest* distance" means nothing unless a contrast with *longer* distances is implied. Suppose, then, it is proposed to test the so-called axiom in a given instance. Let our problem be to determine whether this straight line which we have just drawn between *a* and *b is* really shorter than any other possible line between the same two points. How shall we know that this line *a*——*b* is straight? Only by comparing it with other actual or imag-

nary lines that crook or curve. How shall we know that the same line is shorter than any of the crooked or curved lines? Only by measuring it and them with the unaided eye or with some standard of measurement. Now for practical purposes our sensitiveness to differences in the length of lines, and to any departure of lines from a straight course, may be assumed to be about equal. Theoretically and actually, too, when it comes to the utmost niceties of measurement, this is not precisely true. But the fact is that if, in the act of measuring the line *a b*, in order to test its fidelity to the terms of the axiom, it is discovered to be either crooking and curving at any point, or failing in "being short," it is promptly rejected as not an example under the axiom. And if, by an act of imagination, the mind passes beyond all the limits of an actual testing of the character of the line *a b*, the same experience is found to hold good. I cannot imagine this line to deviate infinitesimally from the straight path without imagining, at the place of deviation, another and perfectly straight path which would take the point tracing the line by a shorter course to its desired goal.

Suppose now, however, this so-called axiom be thrown into its more appropriate and useful form; and let the statement of the truth previously employed be relegated to the place of a definition. We are then told that "through every two points in space one and only one straight line may be drawn." This statement reduces the axiom to the form of a postulate, — an asking of us to grant the possibility of drawing — in imagination, of course — a straight line between any two points in space. The words "one and only one" are entirely superfluous; for the definition of a straight line *is* "the shortest," and to think of more than one "shortest" is absurd. The postulated possibility of drawing one straight line between any two points in space is, for our mental representation of space, a self-evident but tautological proposition. For if the ends of a line are defined as "points," then any

two imaginary points may, of course, be imagined as the ends of any number of imaginary lines. For mere situation or mere distance in space has no power to prevent the imagination from drawing lines; the rather is the very nature of our mental representation of space such as to insure the possibility of a perfectly free activity of imagination in this kind of play. Between any *a* and any *b* an indefinite number of paths of connection lie open to the imagination. And, of course, one of these is the straight and shortest path which starts the line with one end in *a* and lands it with the other in *b*. This *is* the straight line *a*——*b*.

Similar conclusions are reached, though by a somewhat more complicated use of the powers of perception, imagination, and reasoning, with regard to another so-called axiom, or postulate, of geometry. On the straight line *A B*, at any two points, let the two perpendiculars *A C* and *B D* be erected; at points equidistant from *A* and *B* let these perpendiculars be crossed by a straight line connecting the points *C* and *D*; and let the length of the line *A B* = *x*, and the length of the line *C D* = *y*: then *x* = *y*. Now how do we know this? The proposition may be said to be axiomatic, or self-evident, to sense-perception and to imagination; but only after a somewhat complex exercise of these faculties has been performed under control from those "general axioms" which apply to all our reasoning processes. Finally, however, the result comes to an identical judgment which is based upon inspection of the spatial relations of objects. If either of the lines, *A C* and *B D*, leans in the slightest degree toward or away from the other, the postulate is violated. But if nothing of this sort happens, then, of course, the two lines will remain the same distance apart; and other lines which measure this distance will themselves be of equal length. For by "distance between two lines," under the circumstances postulated here, we mean nothing else than the paths traversed by the line *A B* between the points *A* and *B*, and

by the line $C\,D$ between the points C and D. This is equivalent to saying, $x = y$.

If now it were desired to submit this so-called axiom to testing by any particular example, it would be necessary to watch for any "leanings" in either of the perpendiculars $A\,C$ and $B\,D$, and for all crookings and curvings in the lines $A\,B$ and $C\,D$. Here, again, for ordinary practical purposes, our sensitiveness to the leanings of the perpendiculars and to the consequent shortening or lengthening of the connecting lines may be assumed to be about equal. But, theoretically and actually, too, as tested by the niceties of experimental methods, the relations between the least perceptible differences of the angles of the parallelogram, and the least perceptible differences of the lines forming its sides, are exceedingly complex and variable. But if I once free the axiom from the limitations of sense, I cannot imagine the lines $A\,C$ and $B\,D$ *being* any nearer together without leaning, *i. e.*, *beginning to get* nearer together. When a carpenter, for instance, wishes to apply this axiom to the making of a table's top, he uses his square both to "right" the angles and to measure the sides. Only as he makes both these measurements does he construct the shape and size correctly. He thus illustrates his appreciation of the self-evident and tautological character of the geometrical judgments involved: Under all such relations of angles and straight lines to one another, $x = y$.

The modern geometry, however, in its striving for an extension of the "purity" of its system of connected propositions, starts from a postulated rather than from an intuitively perceived proposition. Three possible cases, it says, may occur; but only three. These are, $x = y$; $x > y$; and $x < y$. Each of these three may be made, if once postulated, the point of starting for divergent systems of space relations, so far as such relations are determinable from this particular point of starting. But in thus changing the axiom to a

postulate, and then introducing three cases of the postulate, geometry falls back upon the incontestable validity of the "general axioms" which apply to all human reasoning. Otherwise, how does it know that these three cases exhaust all the possible postulates; that x *must* either equal y, or be greater than y, or less than y? And how does it know that we may reason about x and y at all?

In similar fashion, all mathematical figures may be regarded as mere hypotheses by which experience is reconciled with the fundamental laws of intellect through the help of the schematizing power of the imagination. Thus, on the one side, geometrical lines and figures are made copies which are taken from sensuous experience; on the other side, they are abstract relations which are assumed by the intellect, in order to bring the system of them into absolute agreement with the demands of logic.[1]

In passing to the discussion of the allied conception of number, we may be pardoned for calling attention again to the truths of metaphysical import which the discussion of the conception of quantity has evoked. Man's actual measurements of the world of things are all, indeed, subjective and relative; he selects his standards and his points of view, and thus calculates, or discerns, in terms applicable from one to another, the spatial qualities and relations of the objects of his cognitive experience. This he does in the carrying out of his practical ends — including in the word "practical," the progressive mastery of the geometrical science of things. All geometrical propositions are, therefore, applicable to the mental representation of the world of objects as in space, and from the point of view which regards their extensive magnitude only. But man also measures the amounts of physical energy — the actual work accomplished, or work potentially implicated — which belong to things. This measuring, too, is equally subjective and relative. And

[1] Compare Caspari, "Grundprobleme der Erkenntnissthätigkeit," II., p. 217 f.

both kinds of the application of the doctrine of quantity are made possible by his experience with the facts of motion as regulated by the laws of motion — whether theoretical and based on the nature of space, or based on observation of the actual changes of things in space.

All man's science of quantity, however, implies an important ontological truth as to the actual nature of things. Otherwise this so-called science is not knowledge; — much less is it that peculiarly convincing form of knowledge to which the name of "science" is properly restricted. Thus what is implied in our use of the categories of space and of force, is extended in the same direction by what is implied in the facts of measurement and in the category of quantity. The world is known as a system of quantitatively comparable and measurable, concrete realities. To affirm this is to endow the world with an ideal and rational nature — *so far forth*, after the analogy of our own. The "pure" and the "applied" science of measurement and of quantity is, indeed, anthropomorphic. It applies to the envisaged pictures of particular things extended in space and enduring in time. But it is also knowledge of a Reality over which mind rules in the disposition and distribution of the one Being and Force of the world.

CHAPTER XII

NUMBER AND UNITY

THAT some kind of numbering, as an activity and achievement of the human mind, is necessary in order to the rudest objective measurement has already been implied in discussing the category of quantity. For it is by comparison of discrete things with one another, or by successive application of some one thing, as a standard, to other things — their extensions or their distances — that all genuine measurement takes place. In estimating amounts of physical force also, some "unit" of force must be employed; and this involves at least a naïve and crude conception of number. In all those more accurate measurements which not only science but also the successful intercourse of men demands, the precise and intelligent use of the acquired power to number is indispensable. Both the making and the recording of measurements, and the whole theory of quantity are dependent upon refinements in those conceptions with which arithmetic and the allied developments of mathematics deal. The science of geometry — "the science of space" — can advance to conquer the new fields that lie opening before it only as it secures support from the developed technique of the science of arithmetic — the "science of number."

As the mental process of measuring lays its emphasis upon discrimination of the qualities and relations of things in space, so the mental process of numbering emphasizes discrimination of the order of occurrences in time. Thus the categories of space and time are, both of them, illustrated;

and the conceptions of spatial and temporal relations are developed in dependence upon the rise and growth of conceptions both of quantity and of number. The one fact of experience upon which all this mental activity is, so to speak, expended, is the fact of change constantly going on in the world of spatially and temporally related objects. Motion in space, estimated under the category of time — this is necessary to all actual measurement of the transactions going on amongst things. And as the *estimate* of amounts of motion is taking place, the process of counting goes on. The "counted-up" quantitative "moments" of the motion, as they follow each other in the moments of time, give the solution of the problem of measurement.

Counting is the essence of all numbering; and — essentially considered — all science of numbers is nothing but counting. We have the clew, then, to those reflections with which the category of number furnishes the searcher after a system of metaphysics, when we have asked and answered these two questions: What is the psychological genesis and nature of the mental process of counting? and what is implicated, as to the ultimate nature of Reality, in the accepted fact that the concrete realities of experience can be counted; and yet that they can be *so* counted only as parts, or "moments," in the unity of the system? In the attempt to deal with this second inquiry all the ultimate problems of metaphysics are involved. For the conception of "Unity" — and without this scientific numbering is impossible — is so important, so fundamental, and yet so comprehensive and variable, that he who understands what it is to be One and yet many has the key to some of the most profound secrets of the universe.

The nature of the mental processes involved in counting, and thus in the genesis and development of conceptions of number, is not especially obscure. There are, to be sure, certain points about which a difference of opinion may fairly

exist; but the main features of these processes are, we believe, the following. The "stream of consciousness," although it has, as a rule, the continuity of a stream, and although no portion of that stream can be considered as independent of all other portions (especially of those most nearly contiguous), is divisible into so-called "states." This division is not to be effected by forces lying outside of the stream itself; it is rather dependent upon concentration of the force of attentive and discriminating consciousness, considered as belonging to the subject of the states. Or, to abandon this figure of speech, the Self does not discern its own states as in any way separable from itself or from one another, by contemplating and manipulating them from without; neither are the states self-separable entities, or qualities of beings not identical with the life of the Self. The different variations in the characteristic content, complexity, and intensity of consciousness, both determine and are determined by the accompanying pulsations of attentive discrimination. Thus the Self, as always both active and passive, the constructor and the observer of its own states, is self-known as a unity and as a discrete manifoldness as well. But both the unity and the discrete manifoldness of the Self are subject to the formal category of time. My life, my very being, is a succession of connected and interdependent states which have the unity they possess given to them by self-consciousness, recognitive memory, and as a *development*, under the control of immanent ideas.

That kind of the succession of conscious states, in time, which most stimulates, favors, and demands, the early exercise of the faculty of counting may be described as follows: A succession of states which are interesting, strikingly similar in content and intensity, but separated from each other by somewhat abrupt changes in the tone of feeling and in the character of the transition between them. If the succession of such states is somewhat rhythmical, the arousement of

the mind to count is the more effective. Such are, for example, the repeated sensations of sound caused by a clock striking, the swaying of the infant's body to and fro in the nurse's arms, the movement before the eyes of the pendulum's swing or of the ball suspended from a cord. Thus arises the dawning consciousness of "again and yet again" — that same feeling and idea, recurrent and separated from the ones that have been and are to be, by the ordering of time. The resultant in consciousness and memory of experiences like these is the first vague idea of a "numerical multiplicity" as distinguished from the manifoldness of parts belonging to one object in space. This does not, indeed, constitute the activity of counting — at least not in any intelligent and scientific fashion. But it forms the impulse to those more intellectual and discriminating mental processes that are involved in genuine counting. And in the case of children and of savages, who can count scarcely at all, but who are by no means insusceptible to minute differences in such numerical multiplicity, it largely takes the place of counting.

The many possible variations in that *terminal state* of consciousness which is produced by the repetition in consciousness of the similar, when broken up into the separate, depend largely upon the number of the repeated similar states. This terminal state may be spoken of as *the inchoate consciousness of numerical multiplicity.* There is a difference, for example, between the conscious statewhich follows as second or third, in a succession of similar states, from that which follows as sixth or seventh; and so on. Of this difference attentive discrimination makes us immediately aware. For example, the clock has given four of the ten strokes which announce an hour of interest to me; I am awaking to the fact that the clock is striking, but I have not as yet *counted* its strokes. But now the fifth stroke arouses in me a vague consciousness corresponding to that number in the

series; the "reverberations" of this acoustic sensation are as of the fifth, and of no other stroke in the series. I therefore count it "five;" and, proceeding now to that more definite repetition of the attentive, ordering, and apperceptive consciousness in which genuine counting consists, I find, on reaching the end of the series, that the entire process of numbering has been correct. But the first part of the process is relatively animal and infantile; the second part is rational and distinctly cognitive. Much of our adult experience illustrates the difference between this vague perception of degrees of "discrete manifoldness," or "numerical multiplicity," and the rational and completely apperceptive process of counting.

It is probable that all genuine counting requires the development of apperceptive and objective consciousness; for as, in the case of measurement, we measure things by means of quantitative discriminations in our own conscious states, so in the case of counting, we number things by means of the repeated strokes, or pulsations, of our apperceptive consciousness. In either case, however, it is not the quantities or the ordering of our own states which interests us; it is rather the sizes, distances, and number of things. The child counts objects, and not the successive conditions or impressions of its mind. To be sure, these conditions and impressions, too, may be made the object of the faculty of numbering; and this is what all self-consciousness is compelled to accomplish. To be self-conscious is to be aware of some particular state as one, of the successive state as another, and as different in time; it is also to assign both states to the one subject of all the states. But in the actual order of the mental development, the culture of the power to count is, at first, chiefly, if not wholly gained in the mastery of the presentations of sense. This mastery involves the cognition of these presentations as separable in space and time and — whether similar or dissimilar in content and

in spatial relations — as capable of being given a fixed place in a series. In this series it is not the characteristic content of the different members which is emphasized by the mind's activity in counting: *it is the character of the arrangement of the members in the series.*

In securing and developing the conceptions of number, all the faculties of the mind are operative. But especially is numbering an intellectual affair. It involves self-conscious and voluntary attention, directing upon the objects in some determinate time-order its repeated strokes, and meanwhile being aware that these strokes are being repeated in this orderly manner. It involves analysis and synthesis — both of them, as applied to the individual members of the series, so as to give to these members individuality and yet constitute them into the unity of the series. It requires a final act of synthesis which completes the conception of that particular number, — of four, or five, or ten, as a unity consisting of just so many members. For, as Dr. Ward has pertinently said:[1] "Every act of intuition or of thought is an act of unifying;" and if the concept of unity were an impression of sense and passively received, it would, in common with other such impressions, be unamenable to change. We must therefore look to the movement of attention for the origin of this category.

It would be a grave mistake, however, to suppose that the mind first forms a clear conception of unity, and then by a process of addition as it were, forms the conceptions of the particular numbers composed of manifold (so many, and no more) units. Here, as in all allied development of the mind in objective knowledge, progress is from the obscure to the clear in general, rather than from the clear in one particular to the clear in all other allied particulars. Without the conception of more than one, no conception of unity itself can

[1] Art. in Encyc. Brit. p. 79; and compare Lipps: "Grundtatsachen des Seelenlebens," p. 590 f.

be gained. The only cow on the island of Helgoland did not become *one* cow for the children on the island until they had visited Festland and seen another of the same kind. Thus all development of numerical conceptions requires that process of reciprocal clarifying which involves the repetition of analysis and synthesis, of separating and uniting. The manifold is known only in a vague way to be different from the single, until this manifold is understood as dependent for its nature upon the coexistence, in intuition or in thought, of a series of units. On the other hand, the *unity* of any single object can be comprehended only as this unity is contrasted with a manifoldness of similar objects that must emphasize its difference from them. "One" and "two," or any number more than one, "part" and "whole," "this here" and "that other over there"—these and all similar conceptions require the clarifying activity of counting the objects as they arise in the stream of consciousness.

Objectively regarded, then, every objective experience is necessarily both one and many, according to the point of view selected for the fixation, distribution, and redistribution of apperceptive attention. And this is because every object is, from the psychological point of view, the construct of an actual analytic and synthetic activity of the intellect.

It thus appears that all conceptions of numbers require that the manifold should be consciously and actively "discreted" by the mind — if one may so speak. But in the construction of those conceptions which answer to the different numbers, the terminal synthetic act of consciousness is made emphatic. I count one, and then another, and then still another; I regard the whole thus attained as a discrete unity and call it "three." I note also the place which each member — no matter what sort of an object, otherwise regarded, it may be — holds in this succession. Thus the conceptions of first, second, and third are gained. Each of these conceptions both separates and unites its objects; for all genuine

counting is a recognition of the discreteness of objects, followed by a recognition of their being now united as members, each in its place, of one and the same series. Thus *number becomes regularly arranged manifoldness*, — with the selection of the particular objects which shall constitute this arrangement left to the will, in its effort to reach practical or theoretical ends, but with the law (*regula*) of arranging determined by the constitution of the intellect. That "two" must follow "one," and must be itself followed by "three," means simply: *I count;* that is, I *mind* the number of things. But what object, or part of an object, shall be put into the place of one, or two, or three, may be as I will. And it is the extent to which the activity of counting can be carried by any individual or any portion of the race, and the choice of points of view in the varied forms of counting, which determine the degree in development of men's conceptions of number as applied to things.

What it is in the construction of objects which makes it possible to count them at all is not now a difficult problem to solve. An appeal is needed to three principles in the solution of every such problem, — two of them more especially formal, and the third more especially dynamic, in character. These are continuity in space, continuity in time, and that combination of distinguishability and comparability which secures an actual correspondence to some idea.

First, then, a certain continuity in space must be intuited, or imagined, for every object-thing to which terms of number can be applied; and this secures to it in particular the unity which is equally secured by the continuity of space that belongs to every other object that is numbered together with it. The being of the one thing is somehow known as continuous in space; it is this spatial continuity which makes it into a unity. But this thing can be "one among many," only on the supposition that some other thing also possesses its own peculiar spatial continuity. Moreover, between

these two things and all other members of the same series of objects, the binding influence, as it were, of existence in the unity of space must be felt. For example, there are ten trees in yonder row, or distributed over that adjacent plot of greensward. No matter, so far as their number is concerned, whether the trees are elms or maples, oaks or yews: *ten* trees are they. This tree is here, a single object with its unbroken extension, and thus constituted for sense-perception and for imagination, one tree; another is there, with its own proper extension, and thus it also makes one tree; but, in number, it is two. Thus straight onward we count the row; or we wander in our counting over the plot where the group is distributed. Spatial continuity, thus broken into a "discrete manifoldness" by the construction and arrangement of the objects, makes it possible to count them. But if one choose, one may mentally seize upon any one of these objects and convert it, by regard to the same principle, into the unity of a discrete manifold. This tree is one tree, indeed; but it has two main branches, and each of these is divided into four or more branches of a secondary order. Every individual member of this new system also is made one by its own continuity in space; and all the individuals together are numbered, as in the system, by extending the principle so as to divide and yet unite them all. No matter how large the object may be to which one chooses to attribute the unity of membership in the numerical series; and no matter how small, even beyond the limits of the highest powers of the microscope; both sensuous intuition and sensuous imagination bow to the laws of objective counting under the principle of the continuity of space.

Continuity in time is another principle to which the constitution of objects must conform in order to be counted and numbered. The very act of counting has been seen to consist in a series of "strokes" of attention that are recognized as separate and successive in time; and the results of which

are summarized by a terminal conception that co-ordinates and synthesizes them all. The very idea of a "series" is dependent upon our experience with what is *successive* and *separable* in time; but also upon the unification of the members of the series under some conception of their number regarded as coexistent in time. For although I must take time to count, I do not number what I have counted unless I regard the different things counted as a unity of beings that belong to the same time. One, two, three, and so on up to ten; but "ten" cannot be conceived of otherwise than as dependent upon the continued existence of the preceding units, with which it is now joined into a new unity. This experience is made objective on the basis of the conditions furnished by the presentations of sense. If, for example, I count the strokes of the clock as it announces the hour of ten, nothing remains in existence that can be regarded as corresponding to the terminal conception of the number ten, — except the conception itself. There have occurred in reality so many events; but there does not now exist in reality any corresponding number of objects. If, however, I count the ten "real" trees and finish this succession of impressions in time by the judgment, "There are ten;" then this judgment of numbers may be verified by any one who can count, as often as one will. One may begin at either end, or in the middle of the row; one may divide the entire series with pauses in the counting, into as many sub-groups as one will; but there are always ten. In order that they may be counted as ten — objectively and actually — these presentations of sense *must be known as coexistent in one time.* Endurance of objects in time, and the objective unity of time, is thus a necessary assumption of the application of conceptions of number to our presentations of sense, or to the constructs of intellect and imagination in terms of presentation of sense. The principle of continuity in time must be observed in order that objects may be counted and numbered as real existences.

Distinguishability from other objects, and yet comparability with other objects, is necessary in order that any concrete reality may be intuited or imagined under the category of number. In order to appear as "one," every object of sense-perception or of imagination must separate itself off from other objects and yet in such a way as to be comparable with them. To be counted as existent in the world of reality, each thing must be actually one, indeed; and yet it must also be one among many. This implies, on the one hand, that Reality itself is a System of inner Relations which have been somehow set free from internal contradictions; and, on the other hand, it implies in each concrete example a certain steadfastness in obedience to the laws which control its own peculiar relations with other more or less similar objects. The object must separate itself from the environment of objects, in order to be considered as a Thing, a single being; it must also behave in accordance with its own principles of being and not fuse with or lose itself in any other being, if it is to continue its claim to be *counted* at all. Thus men ask in the expressive language of slang, whether this particular thing "counts" for aught or not. The claim to be counted as belonging to the world of actual beings is established only by a certain steadfast action in accordance with certain immanent ideas; it is this which Mr. Bradley has rightly assigned, in its supreme form, only to the Absolute, — namely, that "self-consistency" which is the essence of true being. For only so long, and so far, as any object remains self-consistent, can it be counted as one — as *itself* (the "It" which corresponds to that particular "Self") and no other. This every meanest real thing does in its own more or less perfect measure. But should any object aim to push its self-consistency so far as wholly to isolate itself, should it try to become an exclusive and selfish unity, it would thereby lose all its being. For, in order to be counted and numbered, every single being must stand up with the

rest of the beings of the world — one among many. In respect to its number-characteristic, as in respect to all other characteristics, the "individual lives and moves and has its being" in the Unity of the one infinitely manifold System.

The metaphysical truth with which we have just been dealing has undoubtedly been somewhat figuratively expressed. But the truth told by these figures of speech is truth both of fact as illustrated in ordinary cognitive experience, and also of principle as enforced by the axioms and generalizations of science. He speaks falsehood who affirms that there are ten trees in that row, or fifty species in that genus, or so many thousands of scales on that fish, or scores of petals or sepals in that flower, and does not observe those principles of all that is really numerable. Each object of man's cognition must assert its claim to be counted as "one," by its actual conformity in a self-consistent way to certain ideas; but each object is counted as one among many, to which it stands related by conformity, in all its behavior, to certain laws which govern the entire class. To be sure, one *may* count things together in a quite arbitrary and even freaky way, if one chooses so to do. But such counting does not result in the healthy growth of man's knowledge of the nature of the world in which he lives. The tree is one; the bird in its branches is two; the squirrel in the hole in the branch is three; and the fungus on its trunk is four, — objects all. That you and I see these four things may be of some temporary practical interest to us; but it is not by such loose enumeration of objects that science is built up. Even in this case, our counting observes each of the foregoing three principles of all application of number to reality; since it recognizes the four objects of sense-perception as distinguishable and yet belonging to the common class of the visible, under the formal conditions of space and time.

If now the inquiry be raised, as to what it is that causes

the different objects, which get counted and numbered, to differentiate and yet unify themselves in the way in which they actually do, the only satisfactory reply must take into account the whole system of forces, forms, and laws, under which the world of things is known. This world, from the point of view held by the mind that numbers its objects is itself some sort of a unity of the manifold. Space and time are the formal conditions of this characteristic of number which all the objects of human knowledge possess. But it is the manifold forms taken by the world's constructive forces that must be considered as actually differentiating Reality into the multitude of concrete unities which exist under these formal conditions. In a word, the One Force of the World, under those formal conditions of time and space which It sets to our mental representation of things, by its infinite differentiations also gives existence to many objects, that are, for the time being actual unities, and yet have all their being in manifold relations of dependence to one another. Thus the category of Number depends for its application to the objects of man's knowledge upon the categories of Space, Time, and Force, and upon those conceptions and assumptions as to the Nature of Reality which have already been found to be warranted by all these categories.

By intellectual processes similar to those which construct the abstract science of space, an abstract science of number is founded and developed. The actual synthesis of which the senses and the sensuous imagination are capable extends to only a small number of objects. The need which arithmetic and its allied branches of mathematics feel, of assistance from a system of accepted symbols is, therefore, no less great than the similar need felt by geometry. To discuss the systems actually in use by modern science — their psychological genesis, historical development, and metaphysical import — would take our thought much too far afield. It is enough for present purposes to call attention briefly to the

following truths: First, the essence of all arithmetical processes is the activity of counting; and all the most fundamental rules of arithmetic simply declare the results of the different ways of working this one process of counting. Addition is counting on, and subtraction is counting off. Multiplication is counting on — so many groups which have, each one, so many individuals; and division is counting off, — so many groups, each one of a specified number. As the relations between the symbols which stand for the different numerical magnitudes are complicated, the argument follows the same "general axioms" of all reasoning which geometry employs. Second: even the most primitive and fundamental judgments in mathematics are not, as Kant affirmed, synthetic and *a priori* (in the Kantian meaning of these words). On the contrary, these judgments are analytically descriptive of the results reached in the various modes of the general process of counting. For example, the proposition $5+7=12$, means simply to mark with appropriate and fixed symbols the result of counting five, and then continuing to count until seven more have been counted. But the symbols, $5+7$, may also be taken as a problem; and then they furnish a challenge to perform a certain process of counting, which has a subordinate terminal synthesis introduced at a certain place in the entire course of the process. The conception of twelve, as the predicate of the resulting judgment of equality, adds nothing to the complex conception of the subject $(5+7)$; it simply states the term which has been fixed by agreement for that particular member in the series of objects counted. And whether we pause after the fifth, or after the seventh, or after any other member of the series, in any special way, makes no difference with our conception of the number "twelve." The value of this number is determined by the times the unit has been repeated before arriving at its place, as indicated by the symbol, in the numerical series.

It has already been shown how subjective and relative to

his varying physical and mental interests is the actual system of numbering which man applies to the objects of his concrete experiences. What primarily determines all numbering is the succession of "strokes of attention" as, in connection with the analytic and synthetic activity of intellect, they are applied to the different "moments" in the life of the Self. But objective numbering is determined by something other than man's own choice, not to say his own caprice. The numerations and calculations of science are not *merely* subjective and relative to the desires, wants, and practical ends, of human life. Things, as they appear to man under the conditions of his sense-perception, imagination, and thought, have also something to say as to how he *must* number them. The forces that operate in and between things, and between things and us, determine their number-characteristics for us. This system of objective numbering takes place under the formal conditions of Space and Time, and in accordance with those regulated changes of things which the Force of the world secures, as It manifests itself in the infinite variety of objects that constitute the One World.

Taken in connection, then, with the other categories which have already been critically examined, this category of number enforces the same truth as to the Nature of Reality which we have learned from them. In those transitory and changing relations which furnish the conditions for the application of the conceptions of unity and of manifoldness (of "numerical multiplicity") to man's mental representation of the world as in space and time, there are sure tokens to be discovered as to the unchanging and absolute character of the trans-subjectively Real. The ontological doctrine thus derived includes the following particulars: first, the reality of certain ideal relations which always control the actual changes of things; second, the actual manifoldness of that Being of the World in which the relations coexist; third, the reality of some unifying bond or principle, which actu-

ally unites the elements into separate unities, and which also binds them all together into higher and higher unities, and at last into a supreme Unity. In one word, the metaphysical doctrine of number compels us to credit as ontologically true — *the Reality of the manifold in Unity, of the One as comprehending and conditioning the many.*

Thus does the inquiry after the highest valid conception of "unity" become an all-important problem for any metaphysical system. In discussing this problem it is almost as difficult as it is unprofitable to shirk, or to discredit, the import of the facts of man's common experience. Approaching the problem on the side of knowledge, we know that all our conceptions of any manner of unity are derived from the self-conscious unifying activity of the mind. In every intuition of a single object, or of several objects, whether combined to constitute a single group or known as contrasted groups, it is the grasping together by active consciousness which gives the number-qualification to the intuition. And the limit of the cognition attained, both as respects its clearness and as respects its manifoldness, depends upon this unifying and yet differentiating "grasp of consciousness." So, too, are all imagination of, and all reasoning about, numbers dependent upon the same unifying *actus* of the mind.

But in any completed act of knowledge the object, thus produced by the mind's self-activity, is also presented to the mind as being really a unity. What is it *really* to be one; what is it to be an *actual* unity? This is an ontological inquiry, a question which has its place in a system of metaphysics. Whenever we speak of the "unity" of Force, or the "unity" of the World, or the "unity" of the origin or the continued connection of all beings in One Absolute or World-Ground, we surely need to determine carefully the meaning of our numerical conception. But for such phrases no meaning can be found which is not framed after a more or less perfect analogy of the self-known unity of the Self. It is the

Self which is the source of the logical formulas and the typical example of every kind and degree of unity.[1] The same *Ego*, which actively constitutes all the known unities, knows itself as the highest type of what it is to be *one*, in truth and in reality.

Things possess unity only in a way inferior to that unity which the self possesses in the highest degree. Let there be no mistake here: it is not the imagined rigidity of the steel bar which constitutes the highest kind of an actual unity. This particular piece of metal, which has just been cut off at the rolling-mill, is indeed "one" in a very solid and permanent way. It will require no small expenditure of force to divide it into two or more parts; it will take no little time to dissolve its unity into a multiplicity by the slow consumption of the natural forces of heat and cold and moisture, etc. Although it is a unity of a certain sort, it is, nevertheless, undergoing constant change; it is, indeed, a different thing every moment of its seemingly unchanging existence. The mind regards it as the same, one Thing through all its minute and invisible changes, — the same S, — because the changes run through the series, S, S_α, S_β, S_γ, — S_ν, and so obey the laws, or immanent ideas, that control the being of this S. Even thus, however, we cannot frame any conception of what it is for S — the single bar of steel — to be an actual unity without appealing to the analogy of our experience with ourselves.

Any such thing as a bar of steel is really a vast collection of elements that are united, under the conditions of space and time, in accordance with certain relatively simple ideal forms. But in the case of those unities that develop from relatively simple and homogeneous beginnings into exceedingly complex and variable products, the conceptions of number, as they apply directly to the life of the self, become more apprehensible and exact. What is it, for example,

[1] Compare the author's "Philosophy of Mind," chap. vi., "The Unity of Mind."

that gives unity to those forms of life which undergo such astonishing transformations of material, shape, and functions, as certain plants and animals exhibit? It is, obviously, *the subjugation of the manifold in space and time to the unity of ideas.* It is only, however, when the ideas become such conscious states in the being which undergoes the changes as to form incitements and guides to its will, that we reach the highest kind of unity, and the richest variety of content as well. So that the more like the self any other being is known to be, the higher is the unity which that being possesses, because constructed more closely after the pattern of the self. And among selves, that One is the highest actual unity that is the most of a genuine Self.

In discussing the categories of change, being, time, space, and force, frequent reference was made to the conception of unity. In order that change may be more than change, some unifying principle must be discovered or assumed. In order really to be, the being that claims existence for human cognition or human thought must behave itself in accordance with some ideal, harmonizing principle, comprehensible by the human mind. Time, space, and force — all these categories — have number applied to them; and the whole manifold complex of changing and moving things is bound into a system by the unifying of time, and space, and force. But *mere* force will produce no actual unity; and when physics or metaphysics speaks of the unity of force, as though it were an explanatory principle, unless some secret reference is made to the self-consistent and rational activity of a Will, the conception is not advanced a whit beyond the bare statement of the fact of universal interaction. Nay: action and interaction do not mean anything real and vital to man's cognitive experience, unless they are referred for their interpretation to the way in which the Self maintains itself as a unity, in spite of, and by virtue of, its manifold forms of the commerce with things. Without admitting thus much, all meta-

physical discussions of man's conceptions of number seem doomed to end with the closing sentences of Plato's "Parmenides": —

"Then let us say this; and further, as seems to be the truth, let us say that, one is or is not, one and the others in relation to themselves and one another — all of them, in every way — both are and are not, and appear and appear not.

"That is most true."

If, then, the World constitutes a real unity of a kind at once most comprehensible and most effective to account for all man's experience with himself and with other things, this unity is that of an Absolute Self. Its manifold separate realities have their being as manifestations, or "moments," in Its Unity. That this is so, is further indicated and enforced by conceptions which have not yet received critical examination. But the more complete and satisfying conception of the nature of that oneness which man's progress in knowledge justifies him in applying to the system of known realities requires considerations to be drawn from the philosophy of the ideal, — from ethics, æsthetics, and religion. For it is only the self-conscious and self-consistent realization of the highest ideals which can reveal to the mind of man the nature of the highest kind of that Reality which is entitled to be called "One."

CHAPTER XIII

FORMS AND LAWS

CONCEPTIONS corresponding to the words which stand at the head of this chapter compel the extension of our reflections in the effort to discover that Theory of Reality which shall most satisfactorily explain all the facts of man's cognitive experience. "Phenomena" so-called are never appearances of mere, undefined beings, or of unrelated beings, or of beings that follow no particular order in their construction and their behavior. On the contrary, the objects of man's knowledge are always particular beings, constituted in definite form and behaving in more or less uniform manner, whose so-called "natures" may be represented conceptually, and whose behavior he may properly attempt to formulate and to explain as an obedience to the laws of Nature in general. Even the most sudden and surprising changes in the construction or the relations of things do not take them out of the sphere to which the mind deems its conceptions of form and of law to be applicable. For actual changes never move from the wholly formless or chaotic to the fully formed, but only from one form to another more or less distantly allied form; nor does any thing ever change from the wholly unrelated to the precisely related, — a jump from the unconditioned to the definitely conditioned, — but only from one set of relations into another.

On the one hand, without change the very conception of form and law have no significance in reality. On the other hand, change that has absolutely no regard to form and law

can never get any place in reality. All the particular beings — the selves and the things — which are known or can be imagined, are *really* what they are, because their different constituent elements arrange themselves in an *ideal* way, and function together or in sequence, under conditions of reciprocal dependence. This way of their behavior always makes a demand upon us for "reasons" which shall show why the behavior is thus rather than otherwise; and why the series of changes in form, or in relation, follows this particular rather than some other regular course.

It is true that the metaphysical way of interpreting the conceptions of form and law as applied to selves and to things does not seem, at first sight, to answer perfectly to the common-sense view. It is enough for the understanding and practical purposes of the "plain man" that he shall consider the form of things as something that is fixed, and belongs to them as a sort of gift or compulsion from without. So does he, with his carpenter's tools, shape the table or the box; the thing thus shaped, unless some subsequent accident or other formative agency comes upon it, abides in the same shape in which it was put. So, too, does he afterward set the table or the box in such relations as he will to other things; and when he has willed these precise relations, the thing stays where it was set. Little reflection is needed to show that science in its complicated dealings with such transactions — simple as they appear to the "common-sense" consciousness — has a different tale to tell. The form imparted to the table, or to the box, was not originally given to it without respect to the form that the material out of which these new things were constructed, already possessed. The new form was itself due to the characteristic modes of reaction that were given by the material to the formative forces which acted upon it. These modes of reaction themselves were due to the form already belonging to the material, — this old form being the expression of certain forces of cohesion and atomic affinity which

had previously been called out by the action upon the elements of the formative chemico-physical forces under which the wood grew. Nor was the form-giving energy exerted by the carpenter of an essentially different order. It was his saw, plane, and hammer, which shaped the wood into these new relations. But the constantly changing relations of these tools to the wood, as they were shaping it, were themselves produced by changes in the form of the muscles of the carpenter; these latter changes were shaped by those mysterious processes which go on in the efferent nerve-tracts; and these were due to influences that may be traced back to the motor centres of the brain. Nor is there the slightest valid reason in experience to stop here; for it was the formative influence of the stream of consciousness — ideating and willing — on which these motor centres reacted according to their own nature and in obedience to the laws relating them with the mind, which initiated the entire series of connected changes. For this is what form, as belonging to all particular beings, actually is; namely, *the ideal manner in which the forces immanent in things react upon the changes in their relations to one another.* In reality, every particular being is ceaselessly forming itself and being formed. No actual form is ever statical and fixed. The actual form of every Thing is the changing expression of the nature of that thing, as dependent upon the particular part which it is playing at that instant in the total Being of the World.

Similar conclusions follow a critical examination into the meaning, for reality, of that aspect of our common experience which leads to the conception of physical and mental "laws," and to the scientific assumption of a "reign of law" which is universal in the realms both of mind and of matter. In the popular thought the law, like the form, which applies to any particular case is customarily regarded as though it were pre-existent to the beings to which it is applied, — dominating or ruling over them; to "It" they are subject as to a sovereign

whose allegiance has been involuntarily and unthinkingly assumed. Modern science, especially, seems by its phraseology to insist upon making an entity, or explanatory realistic principle, out of its conception of "Law," which it regards as somehow separable from the facts, and as belonging to a higher and more invulnerable order of existences. Not infrequently, the total collection of so-called laws, suspected or definitively ascertained, is thus converted, in thought, into a perfectly rigid and unchanging system of rules, that binds fast, while it wholly explains, the character and the sequences of the phenomena.

In reality, all physical laws are only convenient and often temporary formulas for stating the ways in which things seem actually to behave under a variety of changing relations to one another. Man's knowledge of the world in the midst of which he lives does not begin with, or depend upon, the conviction that the actual facts of his experience are forever and irresistibly bound together under unchanging and universally applicable formulas. The order of mental development proceeds, indeed, from observation of the concrete facts to the conception of a regular connection amongst the facts. But even the modified way in which Lotze states the *a priori* doctrine of this conception of a connection, "in law," for the entire course of things, as antedating experience (*steht vor aller Erfahrung fest*),[1] is not warranted by the actual facts of man's mental development. Chemical laws, for example, can not be spoken of as actually in existence, while as yet all of the necessary elements have not come into the precise relations necessary to their particular forms of chemical union. The laws of physiological chemistry cannot antedate the facts of life. And as to the universal "reign of law," this is a most complicated and intensely modern conception. In its ordinary acceptation, it is an exceedingly figurative and still doubtful affair. Whatever form of interpretation

[1] See his "Metaphysik," *Einleitung*, p. 8 f.

is given to this seductive phrase, the conception answering to it remains something far short of a demonstration or even of a legitimate *a priori* assumption.

While, however, much uncertainty of application belongs to the conceptions of "form" and "law," as these conceptions are held and employed by modern science, both of them are fitly employed in witness of certain forms of cognition which are entitled to be considered forms of reality as well. That is to say, the words express certain categories. No wholly formless Thing can really be; and if such a *no*-thing (*Unding*) could exist, it could not be known to exist. No wholly formless, or unshaped, series of changes can take place in the being of any thing: a real being cannot thus violate the law of its nature, even when feeling the utmost compulsion from outside influences, to change its "manner of life." No wholly formless transaction can occur in which several things take different parts; in every transaction that involves a number of different beings, each individual being must take its own proper part in the form that fitly belongs to it, whether it be some form of action or of suffering. But in all such use of the words "form" and "law," and in all use of similar or cognate terms, one and the same truth is meant. It is meant to apply *ideas* to things, and to the behavior of things. Shaping and being shaped, formative action and forming reaction in response to such action, are both alike significant of the direction of immanent forces in conformity to immanent *ideas*. All so-called "obedience to law" is voluntary or enforced submission to *ideas*. No other meaning, and no meaning whatever which excludes this meaning, can be given to any of these terms; expressed in one word, the truth is this: *Everything that is, and every event that happens, comes under the category of the Idea.*

In illustration of the essential thought on which all such terms concentrate attention, the way that men employ the two words, "form" and "law," deserves further recognition.

In the case of that relatively unchanging material which is seemingly shaped wholly from without, the conception of form overlays and obscures the conception of law; and the truth that both form and law are essentially ideal comes to be regarded as an insignificant common-place. No one thinks of denying that the idea of the carpenter determines the form which the table or box shall have. But, to search the deeper truth, it is the obscure and complicated action and reaction of innumerable factors, mental and physical, under a great number of laws, that determine the form of the finished product. Brain cells, nerve-tracts, muscle-fibre, tools of wood and iron, material of wood and iron — all have been both forming and being formed, according to the several laws of their reciprocal relations. Not one of the millions of factors which took part in this transaction will ever return to its original form; and no other table, or box, which called out the same concentration of laws has ever been formed, or ever will be formed again. The combined psychical and physical forces involved have changed the form of all the beings engaged in the transaction; the entire World of Being will never be the same again. The event seems trivial enough; but in it the whole system of reality has actualized once for all a particular series of its ideas; and IT never needs to do things twice alike. Form and law have directed force, and things have changed in conformity to new ideal conditions. The interior, mysterious nature of all this, the silent but marvellous obedience of the concurring factors to the suggestions and directions of the idea, are not to be overlooked or mistaken because the transaction appears to the popular mind so coarse and common-place. For this is just what the conceptions of "form" and of "law" always mean; *the changes which the forces immanent in the beings of the world effect, whether they are changes of the condition of the beings themselves or changes of their mutual relations, always must be known as conforming to ideas.*

From the point of view held by the student of the psychological genesis and development of these conceptions, the subjective and relative character of all man's knowledge of forms and of laws is most obvious. Every real Thing, no matter how fixed, essential, and independent of all mental activity it may appear to be, has in truth an indefinite number of forms and obeys an indefinite number of laws, — according to the mind's voluntary or involuntary changes in its points of view. "Pure" form or "pure" law is a pure abstraction; actual form and really established law require the constructive and relating activity of mind. The psychology of these conceptions shows that they are imparted to things by the mind of man. Forms are given to things by the formative activity of the observing and reflecting mind; laws are imparted to events by the relating and reflecting mind. Forms and laws are mental representations, figurate conceptions, ways in which the senses apprehend and interpret the modifications of the stream of consciousness. No other kind of form seems so well entitled to be the possession of the thing in itself, fixed and independent of all relation to the knower, as its shape or its size, — especially in the case of the solid and unyielding sorts of material. How, for example, are the length and the weight of a steel rail, or the relation which two lines of steel rails sustain to each other over the miles of road-bed from A to B, dependent upon any man's perception, imagination, thought? But the discussion of the categories of quality, relation, and space has already answered this and all similar inquiries. Length and weight have no meaning, independent of the measuring activities of mind, and of the sensations and feelings of effort called forth by the changing relations of the mind to the things that possess the qualities.

Moreover, if one attempt to learn the entire doctrine of form as it applies to any single thing, or to compass the list of so-called laws which any particular being is obeying at any instant of its existence, one will need to exhaust all human

knowledge; and still one will be far enough from reaching a complete fulfilment of one's aim. As to space-form, every single thing embodies all the formal principles of the Euclidean geometry, and offers suggestions which lead the thought out into the wide and airy regions of the new geometry. As to the form of the forces that are centred in each thing, or are concentrated upon it, there is need to invoke for its complete understanding the entire modern theory of dynamics. Heat, light, electricity, magnetism — and more beyond — are all expressing their will in the form which every particular being has assumed, and in the form of the changes it constantly undergoes.

What a mockery of an explanation it is to regard any deed done by any thing as an event under the reign of laws that are totally unrelated to the points of view chosen by the law-giving mind which observes and thinks upon the event! The vase falls to the floor and is broken into a score of pieces. Its fall and breaking appears to me as one continuous, unanalyzable event. Instantly, and at the right moment, when the careless servant's hand struck it, the whole thing, and every part of it down to the separate atoms, knew what to do. *Of its own will* it moved to the floor, to which it was drawn; it then broke itself, just precisely as it was broken, because the molecules and the atoms all knew what was required of them, each one, under such definite but complicated and unaccustomed circumstances. Neither the vase as a whole, nor any of its parts, had ever behaved in any such way before; and certainly they will never have the chance to behave in similar manner again. Yet this its behavior was an inconceivably complicated affair, — a unit-transaction involving the solution, by millions of elements, of an infinitely complex problem which they had never been called upon to solve before. You and I, two human minds, — perhaps objecting to the servant's explanation that the vase "broke itself" — begin to pick the event in pieces, to

analyze it, to consider its unique particularity as a combining of millions of factors, from a score of different points of view. From the point of view of ethics, we blame the careless hand that initiated it; but with the wisdom of modern science, we declare: "It happened according to law." What law, indeed? It would seem that the law of gravitation was most prominently concerned in this particular transaction. But the law of gravitation is no somewhat that existed antecedent to this particular fact, and presided over it; nor had *this* law anything to do with more than one possible aspect of the total complex transaction. The so-called laws of the cohesion of molecules under the influence of heat, and of their separation under mechanical force, must also be summoned to help account for this event. These physical formulas afford us a partial satisfaction in the explanation of another aspect of the whole event. The laws of those untrained minds that work without conscious regard to law may also, well enough, be regarded at this point.

Laws many and forces many — which seem to change themselves in character as we change our points of view and summon more or less of the world's scientific acquisitions to our aid — certainly get concrete expression in every single transaction between things, no matter how apparently simple. Every such transaction is an epitome of the physical universe. Man's attempt to understand it succeeds only in the measure in which he is permitted to read into the event his own ideas. For to discover and to declare the "forms" of things, and to regard them as obeying "laws," is undoubtedly to impose upon trans-subjective realities our human ideas. The Forms of Reality are the ideal ways in which real beings appear to us, as we assume toward them various relations determined by selected points of view. The Laws of Reality are the conceptual forms of behavior which emphasize our attempts at explaining the transactions of real beings, as we reflect upon the many possible aspects which these transactions present.

If now, however, all trans-subjective application or ontological basis for man's conceptions of form and law be denied, the attempt to frame a rational theory of reality must, of course, be forever abandoned. For the conformity to ideas of those unseen forces which our ordinary or our scientific knowledge ascribes to things, is both a postulate and a conclusion of all objective knowledge. The illustration and enforcement of this truth is dependent upon considerations so similar to those which have already been repeatedly presented that our treatment of it may be, at this point, very brief. The knower necessarily conforms his object — since the process of knowing is his conscious activity and no mere receptivity or process of copying-off — to his own sensuous and intellectual life. The object known, however *real* a thing it may be, is never a construct, in respect of form or of relation, independent of the knower's Self. If, then, the word "idea" be used in one of its several possible significations (idea=cognition objectively regarded), then every object of cognition, as respects its form and as respects the laws of its relation, is an idea. As said Schopenhauer: "The World is my Idea." As Kant taught: The laws of nature are determined by the functioning of the intellect under its several constitutional forms, — the twelve so-called "categories."

But, on the other hand, no object of any form of human cognitive experience is merely man's idea. Its being, as an object of knowledge, is also the product wrought by a will "of its own," an activity that is principled according to its own appropriate set of ideas. The moment I begin to regard my object as a *real* existence, I recognize that it actually contributes its quota to the transaction between us in which I get *my* idea *of* it, and learn the laws of its nature and of its behavior toward other things. I can, indeed, observe this object from different points of view, and then regard it as an appearance to me, in conformity with the forms and laws of my ideating and thinking Self. But, on the other hand, I

cannot dictate to it how it shall appear, regardless of that group of ideas which constitute its formal nature, and the so-called laws of its relations to other beings in the system of things. Nothing else so shocks common-sense and so destroys all the foundations of science, without in the least contributing to the psychological or philosophical explanation of the facts of experience, as the claim that the forms and laws of real things are determined *merely* by the ideas of man.

That the forms and laws ascribed by the intellect of man to things have a trans-subjective basis, and are not merely imparted to things by the mental act of knowledge, is one of the ontological assumptions which metaphysics has a perfect right to receive from a critical theory of knowledge. The proper metaphysical (as distinguished from the epistemological) inquiries are these: What is it really to have form, or to assist in forming reality? and, What is it, in reality, to obey or to follow laws? or, finally: What view of the Nature of Reality follows from the observed facts that the world of things is a system of formed beings, of formative forces, and of the connected interaction of individuals under the so-called "reign of universal law?"

Things *actually have* forms; they *really act* in formative ways upon one another; and they *do actually* obey laws. These and similar phrases express an ontological truth which all man's experience with things enforces, and which a critical treatment of the categories can neither gainsay nor neglect. But what that goes on in reality, what that is attributable to the concrete real beings and their actual behavior, is meant by such phrases? Truths of the process of cognition they plainly set forth; but what are the truths they assume as to the construction and processes of reality?

Any direct and satisfactory answer to such inquiries as the foregoing comes only when reflection turns toward our self-conscious and indubitable experience with our Self in commerce with Things. I know well what it is for me to form

something else, or to be myself formed by some other, and to obey or to evade the laws of my own being: *It is to will according to my own ideas, in reciprocally determining relations with other wills.* To take any part in forming one's self or others, means to direct my action in pursuit of my own ideas, and yet in recognition of variable relations between myself and other beings. For without recognition of the ideas according to which these other beings act in their relations to me, I cannot avail myself of them, either to form myself by them or to form them to my will. Whether the influence of the idea, in its direction of the stream of consciousness, extends only to the choice of an apple out of a plate-full, or contemplates the forming of a finished moral character, the necessity is the same. All man's different bodily movements, and the different "moments" in his psychical development, must be regarded as co-operating forces, acting and reacting under the direction of ideas. This, too, is precisely what is meant when we regard ourselves as shaping some external and material thing so as to render it an example, in reality, of our own ideas.

The actuality of this ideal interpretation of the words form and law, as applied to the system of things, does not admit of question or debate in respect to one class of external or thing-like objects. This class comprises all other selves than our self, — for each man, his fellow-men. And here it must not be forgotten that for every knower there are only two possible kinds of objects, which can claim for their reality the immediacy of an incontestable knowledge; these are the Self, and Things. As the knowledge of the self changes and develops, the more external and less central factors of this object — the members of the body as viewed from the outside and even the brain as imagined or thought — become, for the Self, other things than itself. Always the primary evidence for the existence and the activity of all other selves is the knowledge of things; for each Self, every

other being — other men included — is known as a "Thing." What is really indicated by the vague and mischievously figurative conception of a so-called "social self" is nothing but a collection of thing-like existences whose changes I interpret in terms of the self-conscious processes of feeling, ideating, and willing, which I know myself to have. All this, however, amounts to saying that the changes of form, passively endured or actively accomplished, and the changes of relation in obedience to law, of *these* things are known to me as expressions of other will, and other ideas, than my own.

If now the grounds be examined on which such an interpretation of the actual significance of the behavior of things reposes, it appears in no essential respect peculiar, much less unique, when it is applied to other selves. The way is open for the advocate of a pure subjectivism, in treating this category, too, to go through his customary series of tedious and ineffectual objections to any form of realism. You are, for me, merely existent in my idea — as the idea of a thing. You are, for me, mere fact of sensation, and fainter, recurrent image of sensation, and expectation of the renewal of sensation, etc. And sitting in your academic chair, with your agnostic pen in hand, you may write me down as a maker of unverifiable assertions when I maintain that I know you as a trans-subjective entity, *not* dependent for your real being, or actual behavior, on my stream of consciousness. But this agnostic asseveration itself is so absurd and self-contradictory that it cannot be stated in other than suicidal terms. And upon the confidence of all men that it is not true — nay, that it has not so much as a faint shadow of truth to urge in its behalf — all men's knowledge of each other, of life, of society, of history, and even of themselves in the last analysis, is seen to repose. Yet the confidence itself, in the last analysis, is nothing other than confidence in the interpretation of the changes of things in terms of ideas.

Now, so far as all that is essential to the categories of Form

and Law is concerned, other things, which are not other selves, do not differ from other selves. Things differ from selves in respect of the forms they assume and impress upon one another; they differ also in respect of the particular laws which they obey or treat with disregard. The stone will not change its color-form when you insult it; nor will it be recreant to the law of gravitation in answer to your beseechings. The limitations that it acknowledges in the series of formal changes through which it passes are different from those acknowledged by you and by me. But the limitations of form and law acknowledged by this particular stone are also different from those which are acknowledged by another species of stone; or by the feather which the stone, when thrown, dislodges from the bird's wing. There are, in reality, many kinds of things; and each kind obeys some of the laws and carries out some of the ideas of all other things; but each kind has ideas of its own, and makes, by its actual concrete behavior, combinations of laws peculiar to itself. To no kind of things, however, can the conceptions of active and passive form, or of law, be applied without express or tacit recognition of the influence of immanent ideas.

Undoubtedly, as the analogies to the Self, by which we interpret the constitution, changes, and relations of things, become more vague and remote, we begin to lose confidence in the perfect validity of our interpretation. We begin to hesitate *as to where we shall locate* the explanatory principle. But this point of vacillation is not a point of higher privilege and of profounder knowledge. On the contrary, it is a point which marks the deepening shadows of human ignorance. Everywhere, in everything and in every transaction, appears the presence of ideas — so far as any feature or form of behavior clearly appears. But we anon commence to ask: To whose being does this particular idea belong? or, What, after all, is the exact idea expressed by this feature or behavior of this thing? The same questions are often enough asked by

every one with reference to one's fellow-men; they are even sometimes pertinently asked with regard to one's own self. No man can claim to know throughout all the ideas which he actually realizes,— much less his own entire nature and all the laws which it obeys. The knower, too, is constantly expressing ideas not, from the first and wholly, his own. The very growth of self-knowledge is the increasingly clear, complete, and satisfying interpretation of the actual facts of one's own development in terms of the appropriate ideas.

In the case of the forms and laws of the higher animal life, we do not hesitate to claim a valid trans-subjective use of this same category (the category of the "Idea"). The dog, the elephant, the raven, manifest (as no one can doubt) in certain of their changes of form and relation — in the nature and laws of the species and of the individual — the presence and influence of ideas. Some of the ideas they express are their own; but relatively few and feeble are these ideas which have actuality in the streams of consciousness, the psychic existence, of these animals. In a yet more wonderful way does it seem to us — because here the analogies are more remote — that the insects generate, and grow, and enter into complicated social connections, changing their forms and obeying the "laws of their being." The cilia in the mucous membrane of the frog's throat, and the corpuscles in his blood, and every amœboid element in every living structure, behaves also as though it had its own outfit of controlling ideas. Nor is this much less true of the way the rootlets of trees seek the gases and the moisture they require; or the way that flowers form and unfold at their appointed time. And, as a great astronomer has said, every planet always behaves precisely as though it knew just what is expected of it in view of the complicated and changing relations it sustains, at each moment, to all the other members of the solar system. What *is* expected is never twice exactly alike. But the ideas that suggest the proper combination remain unchanged; and the

planets behave themselves according to the particular proportions required by each special combination which actually takes place.

When it is claimed that the popular or scientific recognition of forms and laws in any single case, and the extension of these conceptions over the whole realm of objective knowledge, imply man's confidence in the universal and valid application of ideas to reality, several objections are wont to be proposed. But, as has already been indicated, such objections do not affect the truth that these principles are coextensive with all human knowledge; they are only confessions as to the present limits of some particular branch of knowledge. As far as man's present knowledge extends, and as far as knowledge can be conceived of as extending itself in the future, so far extends the actuality of immanent ideas. The objections do not hold against the category of the Idea: they only inform us of what we knew before; namely, that in a vast number of cases we do not yet know what particular ideas are being realized.

It is in vain to object that physical science does not intend to be thus "anthropomorphic" when it discourses of causes which operate among things in a formative way, or of laws that apply to beings which give no sufficient token of acting under the influence of their own conscious ideas. Physical science does not, indeed, intend to recognize the reality of immanent ideas, by its doctrine of forms and laws; it intends only to state the uniform rules afforded by its generalizations from facts. The rather are all its laws, when regarded from its own point of view, nothing other than generalized physical facts. They summarize the statement; the event happened thus and so, *in fact*, once and again; when a and b were given in fact, under the actual circumstances $n - q$, then x followed, in fact, according to the formula $x = (a + b)\sqrt{n - q}$. The cause of the event x is, therefore, to be found in a and b, which combine to produce it in measures indicated by $n - q$;

and the law of such combinations is given in the formula, $(a+b)\sqrt{n-q}$.

But to all such representations of physical science the reply is pertinent that, in truth, the facts of experience are not fairly stated in this way; nor does this statement cover all that science means by its discourse about forms and laws. Just as the essential factor in the conception of cause is a cognitive experience of forces, so is the essential factor in the conceptions of form and law a cognitive experience of ideas. Crude, unformed, unidealized facts cannot constitute the basis of a scientific induction. The mind of man knows nothing about *mere* facts — about bare, untransformed occurrences in nature or in the self. Facts, when known, are no longer *mere* occurrences, or *mere* deeds; they are known as the behavior of real beings that have certain ideal forms and that act in certain ideal ways. What, indeed, is that "particularity" of the beings which takes part in the transaction, but their complex form, or ideal ways of existence? What is the particular deed they accomplish but their ideal way of behavior? What is the law that defines the uniform action of physical beings under definite relations, but the ideal way which they have of behaving toward one another? Physical science itself is essentially a system of judgments which predicate ideas (universals) of concrete realities (individuals). If by "fact" mere doing is meant, then there is no such scientific knowledge as "knowledge of fact;" for, indeed, every fact is *scientifically* known only as it appears in its connections and relations with other facts — under conceptions of causation, order, and law.

Moreover, mere statement of fact, in the way of generalization and without any recognition of the ideal shaping of the facts and of their relations, is not all that science means by its discourse concerning "forms" and "laws." The insincerity or the flippancy of such a claim is apparent at once when these categories are examined from the point of view furnished

by another objection. Granted, it is now urged, that man is obliged to understand all the being and changes of things as conformable to immanent ideas; still, this is only his manner of conception, or of impressing his ideas upon things. Such a view of reality is anthropomorphic. The ideas are ours; there is no good reason to believe that they actually belong to things. Now, this objection is undoubtedly impressive; but it should, first of all, be noticed that it contradicts in an important way the objection first raised. It was then alleged that scientific cognition, at least, — and whatever may be said for the popular mode of thinking or for a few remaining adherents to a discomfited, idealistic metaphysics — regards both the interior and the reciprocal transactions of things as "mere facts," with no ideas *in them* at all. Now, however, it is alleged that, of course, physical beings and events have ideas in them; but these ideas are unwarrantably put into them by the minds of the observers. Of course, even a scientific man is an *anthropos;* therefore, his cognitions are necessarily "anthropomorphic."

We entered upon this attempt at a system of metaphysics, after having put ourselves on good terms with all the categories. That the universal and necessary forms of knowledge are the forms of reality, was the epistemological postulate which we took into our cheerful confidence from the very first. What a criticism of the categories has shown is this: without accepting the existence in reality — the trans-subjective character — of forms and laws, knowledge is impossible. Knowledge of things involves the understanding of things as actually conforming to immanent ideas. In other words, the "immanent idea" is a category, under which all reality is known by us to fall.

At this point, finally, the objection to fixing a meaning for the word "immanent" — in the use already made of it — becomes more powerful and more difficult to answer. But this objection is chiefly due to the obscurity and doubt which

hang over the answer that must be given to the problem of "*localizing*" the ideas that are known somehow to belong to the reality of things. To speak of ideas as "immanent" in any being suggests at once a relation which is primarily of a spatial order, and to which there clings almost inevitably the original suggestions derived from the perception and the imagination of things as "*in* space." Thus those conscious ideas which are always the partial, and are often the more obvious, explanation of the changes actively produced in our bodies, and in other things, as well as certain changes more passively experienced as due to the action of things upon one another, are said to exist "in" us — with at least a semi-local meaning to the phrase. It is inevitable that we should regard the ideas of other men, and of the higher animals, as seated (or "immanent") in those thing-like objects which constitute for immediate sense-perception the realities themselves. But surely, in all such cases, it is not necessary to regard ideas as entities that are locally situate, under terms of our spatial picture of things, within the things themselves, in order to justify our use of this form of conception!

A relation of spatial extension, or of position after the analogy of a mathematical point within a plane or solid, is not what is intended by the actual "immanency of the Idea." It is, the rather, meant that ideation — in the most general meaning of that word — is an essential factor in all man's cognition; and that when ideation reaches the certainty and rational construction which all cognition implies, it guarantees its own reality as belonging to the objects known. If, from the epistemological point of view, I am compelled to acknowledge that I impress my ideas upon all other things; still, from the ontological point of view, I am equally compelled to believe that things reveal their ideas to me. My entire known world does, indeed, show the constructive work of the formative principles of my intellect; but I am a part — an exceedingly small part, without doubt — of a world that

is far larger than I, and that includes me and all other ideas and other things. The world is known by man to be — in every particular, as well as when regarded in its totality — a system of intellectual formative principles, to which his own mental existence and mental activity are due. *So that there is even more reason to affirm that the ideas immanent in things account for man's ideas, than to find the entire account of this ideal appearance of things in man's ideating activity.*

A brief recall of certain conclusions already reached will assist us further in the effort to understand what is properly meant by recognizing the principle of "immanent ideas" as among the most undoubted of ontological truths. In discussing the category of space it was shown that a critical metaphysics does not for a moment suppose that man's subjective and relative space-picture of the world is a copy of the trans-subjective and absolute Reality. But it was also shown that the ultimate explanation of this universal and necessary form of man's mental representation must be found in regarding Reality as possessing a principle of differentiation, upon whose activity all separate real existences, as well as man's mental representations of them, continually depend. This conclusion regarding the real nature of space involved the category of force, without which no trans-subjective ground for the formal category is conceivable. Space is that form of the differentiation of One Force which secures, in the unity of one system, a multiplicity of different things. But now we have seen that man's cognitive experience will not tolerate an explanation which leaves this self-differentiating and self-distributing Force, to whose work all the actual changes of condition and relation in the world's being are due, bereft of ideas. For the very *essence* of things is in their form; — the "whatness" of every being is always an ideal affair. And the essence of the behavior of things is found in the laws they obey while changing their relations to one another, — the ideas to which they customarily consent. To join ideas

with force in all our knowledge of things, — the ideas, as well as the force, not being considered to be merely a subjective form but also the real possession, the essential constitution of things, — this is to assert the "immanency" of ideas. For ideas are not immanent in reality, when they are imagined as spatially enclosed by the reality, but when they are rationally, and in a certified way, included in our cognition of reality. *The "immanent idea" joins hands with "immanent force," to explain to the mind the inmost nature of that real Being to which they both belong.*

It is instructive to notice how ready men are to recognize the presence in their own bodily and mental existence of ideas and forces not consciously their own. You can easily explain to the unlearned man that his heart beats, his eyes move, his blood flows, his brain functions, his glands secrete, and his thoughts, volitions, and emotions come and go, only very partially as he consciously wills and knows what actually takes place. This is to say, that the forces and ideas of nature account for much which is effected in himself. His own ideas assist in the explanation of what he is, and does, only in a limited way. Each human being, body and mind, in respect of his changes of internal condition or of external relation, is only partially his own; he is very largely the child and possession of nature, — the continuous product of that larger, other Being, which everywhere penetrates his Self, and yet which must be thought of, and known, as not identical with that self. That is to say, his own conscious force and ideas, and the forces and ideas of an Other, of which he is not conscious, are both always immanent in the complete self-hood of every man. By immanency, in both cases, is meant that *inner necessity of relation which belongs to an indispensable explanatory principle.*

Again, then, we repeat that the reality of the immanent idea as a category is indisputable. Objections to this view are due either to ignorance or to the misapplication of terms

by a limited and merely figurative use of them. The legitimate and necessary use of this category is limited only by the extent of human knowledge. Without it knowledge is impossible; and therefore, all reality is known to man as a system of active and formative ideas. The world of things known by the senses and by self-consciousness is a Unity of Will, everywhere manifesting itself as an infinite variety of different beings under the guidance of immanent ideas. The effort to escape from this conclusion only reacts upon itself. Could the effort completely succeed, it would result in the complete nullification of knowledge. For the subjection of reality to the idea is necessarily co-extensive with the entire extent of human knowledge. Indeed, that is just what knowledge is, — the recognition of the ideal character of concrete realities and of actual events.

Whose ideas are these that are immanent in the World of selves and of things? A partial answer to this lofty and somewhat vague but most important inquiry has already been gained. We are irresistibly led on from the facts of the interaction of elements under law to the existence of a supreme Unity which may serve as a real *locus* for the existence of controlling ideas. As Teichmüller, in his *Darwinism and Philosophy*, says: "The interaction of all the elements presupposes laws which go beyond the existence of each separate element, and embrace all particular things in a unity. Whoever, therefore, assumes any laws of nature whatever, must also assume a system of laws, and must consequently refer to one ultimate unity or to an ultimate end." The ideas therefore, belong to that Being whose Force has been recognized as the "unchanging core" of all concrete realities, the Cause of all change, the Principle of all becoming, the trans-subjective Ground of the formal categories of time and space; and the nature of whose existence authenticates all pure science as the result of man's measuring and calculating activities. The ideas, in reality, must be joined with this

Unity of Will. But to join Will and Idea together as combined explanatory principles of all real existences and all actual occurrences, is to provide the most essential factors in the conception of an Absolute Self. It is, indeed, to construct the Being of the World after the analogy of the Self. It is anthropomorphic. But it is a species of anthropomorphism, from which human knowledge can in no way free itself; and without which we are obliged to confess that not only the metaphysics of the schools, but also the metaphysics of science and the metaphysics of life, becomes self-contradictory and absurd.

It is, finally, in connection with the elaborate scientific conceptions of law that the principle of causation returns upon us for further consideration. The connection of the more primitive conception of causation with the exercise of force in relation to objects, and with the intent to carry out our own ideas by effecting changes in things, has already been noticed. It is only as a result of the mature developments which require a growing experience of the system of things, that a conception corresponding to that which modern men attach to this principle is attained. The immature will acts in ways that are full of caprice and ignorance. It neither knows itself, what it wants, nor things, what they can do to it or will suffer from it. This raw, irrational self, whether in the individual or in the race, constructs its conception of nature, or of the gods, after its own pattern. In doing this, it has the warrant of all that lies deepest in human nature, and of all that is most potent in the history of human development. Its essential metaphysics is not so much at fault; but its ignorance is its curse. The modern conceptions of a "universal reign of law," of a rigid "uniformity of Nature," or a Unity of blind, unreasoning Force, are personifications of the forces and ideas, projected into things on the basis of a postulated analogy between them and us, in essentially the same way. At bottom the modern conceptions are

just as truly anthropomorphic as the earlier conceptions were. But the man whose "form" the conceptions bear is a somewhat improved man, — more rational, more influenced by definite ideas, and better acquainted with the truth that his own brief, self-centred life is surrounded and controlled by an all-inclusive and eternal Life.

Just so long and so far, however, as the principle of causation is made the equivalent of a rigid and machine-like construction of Reality, it suffers inevitably from the imperfections and errors that belong to such a conception. It becomes increasingly necessary to recognize the truth — as a truth stamped into the very nature of the human mind and set in every feature of the Mind of Nature — that all talk of a "principle of causation" which does not mean to recognize Will and immanent Ideas at the Ground of things, deals with unmeaning and senseless figures of speech. That is, indeed, just what a "principle of causation" necessarily means — *Will energizing in conformity to ideal forms and aims.*

In further proof of the metaphysical doctrine of forms and laws, let it be noticed to what all our so-called causal explanations really amount. The mind regards the principle of causation as fully satisfied only when the different real beings of the world are considered as so connected that the forces, to which their internal changes of condition or their external changes of relation are referred, follow some law or regular order of occurrence. It is this which is involved in all those defective and questionable forms of statement which the particular sciences have adopted for this principle.[1] A Unity of Force distributed in accordance with immanent ideas, — this is the ontological implicate of the modern scientific view of the world of reality. Every thing, and every element of every thing, behaves in accordance with both its own nature and also its relation to other things and elements,

[1] For the discussion of this principle from the epistemological point of view, see the chapter on "Sufficient Reason," chap. x., Philosophy of Knowledge.

in the unity of a connected system. With less metaphysics than this, the entire modern conception of the universal application of the causal principle, or the so-called "reign of law," must be left where Hume left it. Nothing remains of the principle but subjective custom, together with the feeling of expectation which custom creates. For when criticism adds to this purely subjective description of the principle an *a priori*, and so objective, explanation, like that given to it by Kant, this is done in reliance on an acquaintance with the ontological secrets of the Self. A unity of mind-force, functioning according to its own immanent ideas (the so-called categories), creates, we are told, the causal connections, the objective laws, of Nature. Thus the principle of causation has its metaphysical source revealed in that it is recognized as belonging to the inmost constitution of man's intellect. Even the illusory and sceptical result which follows the attempt to apply the category beyond the realm of the phenomenally real is, according to the Kantian doctrine, a revelation of the ontological doctrine of mind. This view of the principle of causation, however, leaves man, both on his physical and on his rational side, cut off from all actual connection with the extra-mentally Real. Nature is, indeed, the child of man; but whose child is man himself? To this question science replies that he is the child of Nature. But Kant can only reply by a non-scientific, vacillating, and often wholly unintelligible reference to an unknowable "Thing-in-itself" Being of the World, which somehow becomes (we cannot say "causally") related to an unknown "thing-in-itself" being of man.

The moment, however, the nature of those categories which are implied in the principle of causation is clearly discerned, the principle itself becomes a guide to the central truth of metaphysical system. For this principle shows how far the intellectual and scientific development of man has gone in bringing before his own clear consciousness the truth of

all Reality: All selves and all things have their changing places and functions in the one system, because the connection of them all is guaranteed and accomplished by the One Will in its progressive realization of its own Ideas. The whole of Reality is, in fact, —

> "An endless weaving
> To and fro,
> A restless heaving
> Of life and glow."

But the meaning of this fact is found, and its ultimate cause discoverable, only when we introduce the conception of an eternal, omnipresent "formative Spirit."

CHAPTER XIV

TELEOLOGY

No other topic connected with the attempt to frame a valid Theory of Reality has been more thoroughly discussed for two thousand years than the conception of final purpose. One's views upon the subject of teleology may, therefore, be fitly thought to decide in large measure the essential character of the system of metaphysics one is inclined to espouse. What do you conclude as to the objects of your experience — both selves and things — in their relations to ideal ends? The answer which is given to this question goes a long way toward fixing the entire mental and practical attitude toward Life and toward Reality. But the very thoroughness and vigor with which the discussion of the teleological problem has been conducted for so many centuries obviates the necessity for ourselves going over the same details. The facts upon which the different views are made to depend remain essentially unchanged. They may seem to be increased or diminished in number, and to deepen or fade away as respects their vital coloring; but their significance and the problem they propose for the thinker's solution abide ever the same. Nor is it reasonable to suppose that the arguments for, or objections against, any of the different main positions which have hitherto been adopted by the world's thinkers can be altered in any important way.

It is needful for our purpose, therefore, only briefly to define our own positions with reference to the facts, arguments, and conclusions covered by the word "Teleology."

The question proposed in this chapter is scarcely more difficult than the following: How does the Theory of Reality which has already been advocated orient itself with reference to the principal conceptions which are gathered into the doctrine of final purpose, or ideal ends? But even this comparatively simple question will be furthered if its answer is introduced by three remarks which a study of the history of opinion suggests and confirms. First: there are certain facts about which no dispute is possible; and these facts are themselves of such a nature that they cannot even be expressed without introducing the conception of ideal ends as necessary to the interpretation of the facts. Just as conceptions of form and of law, when applied to the objects of man's knowledge, have no meaning unless the actuality of ideal formative principles be admitted, so conceptions of serviceable internal relations between the parts of things, or of external relations of the fitness of one thing to another, prove utterly meaningless unless the influence in reality of ideal ends be admitted. In a word, these facts cannot be stated as *mere* facts, separate from ideas; as facts, they are transactions of things that are necessarily interpreted as conforming to ideas. The point where reflection refuses to recognize the significance of the facts determines one's theory of final purpose as an explanatory principle of Reality.

Second: the difference in the position along the line of fact at which different thinkers refuse to admit in their theory of reality the actual presence and formative influence of ideal ends is significant of a vacillation that is of a logical and epistemological order. The objector to the refusal, at whatever point it comes, might well enough say, "Either all or none." Either admit the principle of "purposiveness," everywhere in the known system of selves and of things, and give to the principle wherever found the same sincere and wholehearted interpretation; or else deny its objective existence anywhere and reject it throughout as explanatory of the

being and transactions of things. But it is impossible to deny that actual final purposes are explanatory principles of the changes in condition and relation of *some* things. Such scepticism would undermine all knowledge and render social life, and individual and generic development, absolutely impossible. The exact place, where scepticism begins, or knowledge ends and agnosticism triumphs, is differently selected by different thinkers. It is always very instructive to notice the alleged grounds on which this exact place is selected; if, indeed, it can be fixed even by the thinker himself. In few cases, if any, can the arrested development of interpretation by the principle of purposiveness be defended with a strict logical consistency. The metaphysician who hesitates in his teleology is almost certainly doomed to be convicted of a half-cowardly inconclusiveness in his dealing with the actual behavior of the concrete beings of the world. Either all, or none, of our known Reality sooner or later feels the influence of this form of the Idea.

But, third, when one seeks for the *motif* of these intellectual differences in the teleology of different systems of metaphysics, — whether by way of avowed and rational conclusion, or of naïve, unconscious submission to unrecognized influences, — some admixture of the ethical and the religious is almost certain to appear. It is not an unmeaning fact of human history that a positive and even dogmatic ethics, or theology, has been accustomed to espouse and defend a pronounced and extended teleology ; while agnosticism, or negation, in matters of ethical and religious reflection has customarily taken the opposite position toward the doctrine of final purpose. Theism has always based itself upon the so-called " teleological argument," in one form or another ; materialism and atheism have always either rejected wholly or greatly minimized the same argument. This they have done by refusing either to accept the alleged facts or to interpret the principle of purposiveness in the theistic way. Unbiased judgment and calm reasoning

— if by these words one is to signify freedom from influence by, and interest in, ethical and religious considerations — is almost nowhere to be found in the discussion of this problem. He who claims such freedom may easily be suspected either of ignorance or of the intention to cover up the real issues of the problem he is attempting to handle. For what is, in fact, at stake in all these discussions is just this, — namely, the idea which humanity shall find itself justified in entertaining as to the Nature of Reality, and so the practical attitude which man shall assume toward this objective Idea.

Upon all these three contested matters the course of the critical discussion which has already been followed leads us to take our positions firmly. Nothing short of complete thoroughness here would comport well with the critical work already accomplished. In the first place, we find it impossible to limit anywhere the conception of final purpose in its application to the concrete facts of reality, — anywhere, that is, in a logical and principled way. The ignorance of man, which is either partial or almost complete in every realm of inquiry, limits his ability to recognize the particular final purposes served by the concrete facts of his experience. The obscurity which hangs like an impenetrable cloud over the beginning and the concluding portions of the present system of things makes it impossible for him to demonstrate the final aim of the World's course. The scale of rising ideas, that tower one above another until they lose themselves in the heights of the loftiest æsthetical and ethical ideals, or that lie one below another until imagination cannot longer conjecture the ultimate foundations of reality, is too vast for his intuition to discern surely or for his calculation to measure precisely. But wherever man's knowledge does go, there does it find the presence indicated of formative principles due to ideal ends. In other words, the facts of purposiveness seem coextensive with the facts of knowledge. All things and all minds in their structure, development, and relations give token of ideal ends to

our cognitive faculties. And without the significant influence of this category there is not a thing or transaction known that is really and satisfactorily known. The Idea as an explanatory principle of the course of events — whether that course consist in changes of internal condition or in changes of external relations — is coextensive with all known Reality.

On the second point, also, we cannot allow ourselves to falter in the logic which draws conclusions as to the significance of human cognitive experience. All Reality *is*, — as known to man or conceivable by man — a system of beings and processes co-operating in the realization of ideal ends. This system is, in reality and in its inmost nature, purposive. Ideas guide it all, not only in respect of the forms which its particular beings take and its particular events follow, but also in respect of the final purposes it pursues. We do not simply imagine that this may be so, or think that it ought to be so; we *know* that it *is* so. The shaping of the changes that go on within the individual, or between related things, so as to realize ideal ends, is an integral part of man's experience with things. When *these* ideas, too, are declared to be "immanent," the adjective is not used with a spatial or purely figurative meaning; it is only asserted that this aspect of the ideal is a necessary factor in the rational explanation of concrete realities. *For Reality, in general, is known as actually being a Unity of Force guided by ideas of form and law into processes that conform to ideal ends.* Indeed, final purpose is only a further extension of the Idea beyond that given to it by the doctrine of real forms and actual laws. Scepticism and agnosticism have their legitimate place in contesting all rash and inconsiderate conclusions as to what are the ends served by particular beings and particular events, or by the entire system of selves and things. On the other hand, the whole known and knowable world must be conceived of as somehow conforming to the principle of teleology.

And with reference to the third position we do not hesitate

as to where our theory of reality requires us to be found. To make universal and far-reaching the immanence of the ideal, is, of course, to philosophize in a way serviceable to the interests of morals and religion. But, then, this is itself chiefly because teleology gives continuity to human knowledge, and brings within the ken of the same cognitive activities all the varied forms of human experience. The whole subject of that deplorable schism between the natural and the moral, between the object of knowledge and the object of faith, between the merely (?) mechanical and the purely ideal, or the phenomenal reality and the Thing-in-itself, comes to the fore in the discussions of teleology. This schism we distrust and abhor. It is not, however, by the identification of what is essentially unlike, or by the neglect of all the truths and interests which belong on either side of the chasm, that one may expect the chasm to be crossed. It is rather by intelligent recognition of the nature of that ideal Unity which belongs to the knower, and as well to all the objects which he knows or can ever expect to know. The knowledge of this knower is one, — a unity that is a continuity of development under guidance of the ideal. This ideal is that of the perfect Self; and this perfect self cannot be a mere knower, much less a mere knower of things, without knowledge of its own self, and of that larger and universal Self which unifies all other selves and things. And just as there are æsthetical and ethical "momenta" in all knowledge, so there are at least fragmentary and shadowy æsthetical and ethical factors in all things. All Things actually *serve* some ends. The teleological construction of the system of things and selves is, therefore, a most important conception to cherish; but the conception must be subjected to criticism, if one would not willingly be divided against one's self, in a World that would thus be made at hopeless contradiction with its larger Self.

All things and events are in fact purposeful; the conclusion is legitimate, which recognizes in the real world the universal

presence of immanent ideal ends; the basis, but not the completion, of the edifice of moral and religious ideals as belonging to the inmost Nature of Reality is thus made a rational tenet of metaphysical philosophy; — such are the three important positions to which we find ourselves brought by reflection upon the fundamental facts and primitive truths of man's experience with both selves and things.

The psychological genesis of the conception of final purpose is not at all obscure, although it is complex. This conception arises in experience primarily when the satisfaction of some desire is willed, and then those means for its actualization are employed which it is apprehended will result in actual satisfaction of the desire. The completer conception is, indeed, that of intelligent and purposeful willing, — of action guided by ideas in the plan to attain the ends set by ideas. Thus there is ground in experience for the description which Volkmann gives of all the higher forms of behavior on the part of the Willing Self.[1]

No immediate causal connection exists, however, for man's apprehension, between any particular desire and its satisfaction; and all that the later developments of desire can do is to lend to the desire an ideal form which opens or expands the outlook to its satisfaction. A detachment of the desire from the original idea is, therefore, necessary; and as well, a further attachment of the desire to that series of ideas which experience has found to lie between it and the original desire (the "means" to the "end"). The means themselves then become desired and selected as means to an ideal end. Thus the causal activity of the self comes to have fuller play with the first and last pair of the members to the series in its own inner world; while the causal activity of things determines the median members of the series in the external world. We can choose the ends we will try to secure and the course of actions we will follow in the effort to attain them; but these

[1] Lehrbuch der Psychologie, II., p. 451 f.

very choices link us in with those courses of extra-mental changes that lie beyond our choice, and often beyond the reach of our ideas. Thus does final purpose, or the willing of desired ideal ends, mediate and bind together the combinations that constantly go on between the life of the self and the world of external things.

It is not necessary to trace the development of this conception of final purpose, or its application to the entire being and life-course of the Self. As we have elsewhere said, on gathering together the conclusions of a detailed descriptive history into those principles which are most fundamental and universal in their control over human life and destiny: "Activity to some purpose is the ruling principle of mental development." In this complex life, under the keener eye of trained experience many final ends of a physical and psychical sort, which the self at first unconsciously serves or attains, become consciously discerned and followed. Indeed, the growth of self-knowledge is largely just this, — namely, the making of the ideal ends which our so-called "nature" sets for us to be our own consciously and intelligently adopted ideas. To attain genuine self-knowledge one must know what the self is meant for, as truly as what is the matter-of-fact working of its mechanism of body and mind. But, on the other hand, under the laws of practice and habit, many ideal ends, that were at first realizable only through conscious discrimination and voluntary effort, come to realize themselves smoothly and unconsciously, in a so-called automatic and mechanical way. For the teleology of the human being requires that in the pursuit and attainment of many ends the interference of conscious ideas shall be removed. Thus do art and genius often show the man as he is swayed and guided by the ideas of "another" into a path whose end is the more perfect realization of the highest and noblest ideals. A human being that were not through and through actually penetrated with purposiveness would not rise to the rank of the lowest conceivable

physical and psychical mechanism. For, as will appear subsequently, the very conception of a "mechanism" is meaningless without illumination from the idea of means and ends. And, in fact, the more I know of myself, the more do I know of those ideal ends of my being which I have been consciously or unconsciously realizing. The lamentation that no one knows surely, or with any approach to completeness, what is the last and highest end of his particular existence and development, is a valid confession of ignorance; but it is not, in the slightest degree, a fact which prejudices the universal applicability of the conception of final purpose in self-knowledge.

The validity of this form of knowledge for the being of man is, like that of every other category, within the necessary limitations of all human mental life, immediate and undoubted. If I examine that "stream of consciousness" I call myself, *as such*, I find that its nature and its course require the conception of final purpose for its interpretation. I know indubitably that I reach the satisfaction of my desires by willing a certain series of occurrences which involve both subjective and objective factors, causally connected and resulting in the actual satisfaction of these desires. And the developing science of humanity consists, in no small measure, in learning how certain ideas, which arise within the stream of consciousness (ideas of the final purpose of man in general and of the individual in particular), enable one better to understand the nature and connections of the entire stream. This is the meaning of the modern tendency to render all the sciences of man more thoroughly psychological.

Nor can there be reasonable dispute over the contention that certain thing-objects are known, in respect of their own structure and development, to come under the conception of final purpose. The judgments which affirm that this conception is applicable to certain physical beings are as truly and indisputably cognitive as any judgments can possibly be. The fact which such judgments affirm is precisely this, — the

complex fact of purposiveness as belonging to the very existence and essence of the thing. To take the stock example — much used and much derided: the entire structure and all the functions of the human eye are known as coming in fact under the conception of final purpose. This statement is as true of the picture of this organ when given by the most elaborate modern treatise on anatomy and physiology as it is of the most naïve and uninstructed conception of the same organ. Indeed, what the modern treatise does, for the most part, is to elaborate and give precision and detail to the teleology of this particular thing. For without the conception of final purpose, "structure" and "functions" are words that have no meaning. The very term "human eye," means a structure whose function is to enable man to see. Every part of this complex mechanism answers with equal promptness and cogency to the same demand of the inquiring mind. A "lens" *is* an arrangement of elements whose behavior serves the end of transmitting and reflecting light; and the lenses of the eye have, in fact, this final purpose in the structure and functions of the eye. The retina is a complex structure, about the details of which there are still some doubtful points; but about the final purpose of this part of the organ, there exists no doubt; it *has* the ideal end of serving as a sensitive, nervous screen on which the image of the object can be formed, and from which the appropriate nervous changes can be transmitted to the visual areas of the brain.

To say that all such teleological statement of fact is "anthropomorphic" has absolutely no influence on a contention like ours. For our contention is just this, that the *facts* of many of man's most assured cognitions are concrete examples of the rule of final purpose over things. Or, to put the case in a slightly different way, certain things are known, as a matter of incontestable fact, to be composed of parts and elements which are arranged, and which function together, so as actually to secure ideal ends. To call such cognitions "anthropo-

morphic" is to do them honor rather than to discredit them. It is cowardice to be frightened away from the legitimate logical fruits of such a many-branched tree of knowledge; and it is folly to deny the existence of these fruits, simply because it is with the eyes of reason that we see them hanging there. Knowledge is not less trustworthy, and things are not less real, when things are known to have such a structure and such functions as to comport, in reality, with ideal ends.

The comparative crudity of the physico-chemical science of the seventeenth and eighteenth centuries with which Kant was acquainted, led him to limit the facts of final purpose to certain more obviously organic natural products. "Things," he declared, "regarded as natural purposes, are organized beings;" [1] and "only a product of such a kind can be called a *natural purpose*, and this because it is an *organized* and *self-organizing* being." Elsewhere he even affirms that such an organized and purposeful being must have its cause, "not in the mechanism of nature, but in a being whose faculty of action is determined through concepts:" in short, "it is requisite that its form be not possible according to mere natural laws." It is scarcely necessary again to remind ourselves that the very words "form," "mechanism of nature," and "natural laws," are devoid of meaning unless applied to forces that act causally in conformity to ideas. Indeed, man's entire thought of nature is only that of a Being whose action is determined through concepts; other action than this is inconceivable as resulting in any such "mechanism," "system," "unity," collection of forms obeying laws, as is fitly meant by the word *Nature;* and surely not less when we personify the word enough to spell it with a capital.

But special attention must be called to the important change which modern evolutionary science has made in such a term as that employed by Kant, — "an *organized* and *self-organizing*

[1] Kritik of Judgment, Part II., Div. I., heading of § 65. The other sentences are taken from this and the preceding article.

being." Chemistry and biology — not to speak of psychology — have outstripped mathematical physics in the conception which they have prepared as a content for this Kantian phrase. By this statement it is not meant that the distinction between living and non-living beings has been abolished or made less important by modern science. On the contrary, this distinction is now more clearly established than it was in the time of Kant. For it is now known, somewhat better than was then known, what is the "Technic of nature;" although we know scarcely better whether the "womb" of "mother Earth" can be supposed at any time to have tolerated such a *generatio æquivoca* as Kant pronounced absurd (namely, the production of an organized being through the mechanics of crude, unorganized matter). What is known clearly, however, and in spite of all continued doubt about the problem of the beginnings of life, is this: Everything is "an organized and self-organizing being," in no insignificant meaning of these words.

The chemico-physical and biological sciences — we repeat — in their most modern form compel us to regard every physical thing, whether living or non-living, as an "organized and self-organizing being." They emphasize the declaration of Schelling: "The peculiarity of nature rests on the fact that with all its mechanism it is yet full of purpose." Crystals do not grow, indeed, but they are organized in teleological fashion and by "self-organizing" processes. The same truth follows with respect to the interior structure of every real Thing, as a necessary corollary from the very nature of the physical elements themselves. Every so-called "natural" being is a composite of these elements, that have arranged themselves in definite ways, and that act and react upon each other as parts of a quasi-organic totality. Strictly regarded, this totality is perpetually organizing itself anew, in accordance with the specific idea which belongs to its own kind of existence.

The more completely the grounds of this organific proced-

ure of all things are carried back to the original and unchanging constitution of the atoms themselves, the more is the "self-organizing being" of the atoms loaded down with an ever-increasing weight of content. For if the atoms are not themselves organized under the guidance of ideas, by the activity of still more primitive elements, they none the less bear the marks of "manufactured articles." That is to say, their nature and outfit shows them *adapted*, from the first, to serve an almost endless variety of ideal ends. If they are regarded as not developing the faculty of "action as determined through concepts," it is because they are regarded as possessing this faculty from the first; and only thus can any organization or building take place, whether of living or non-living things. A circle, or regular hexagon, inscribed in the sand, Kant thinks, any man might well consider a sure sign of final purpose; but why not the geometrical structure of the sand itself, considered as the result attained by the action, in time, of organific forces?

To return to a categorical truth emphasized in an earlier chapter (chap. v.): "really to be" a Thing is to possess somehow the faculty, or power, of running through a certain series of changes — of active doings and passive impressions — that corresponds to the concept of that *particular* thing. When any being ceases to have this faculty or power, it loses all means of manifesting itself to man's mind as really in existence at all. *The inherent teleology, or purposeness in fact, of every real thing belongs to its very being as a "Thing."*

That conception of final purpose which simply covers the bare being of a thing, considered as a collection of self-organizing material elements (the physical "in-itself-being" of the natural product), is indeed very inadequate. Men do not make things, and keep them in existence, with the simple purpose of having the things exist; men make things as means either to an enjoyment of them, or to the attainment of other ends which lie beyond and above the manufactured

articles. Here is where the objection of Kant to what he considered an unwarrantable extension of the very conception of purposiveness found an entrance into his teleology. "For if all things," he argues, "must be thought as purposes, then to be a thing is the same thing as to be a purpose, and there is at bottom nothing which especially deserves to be represented as purpose." Here, indeed, is a most curious and instructive mixture of truth and error. It does not, indeed, follow that "being a Thing" = "being a purpose," because real things are much more than mere purposes; on the other hand, no thing can be real, can really be, unless it conforms its elements and their functions to the ideal ends of that particular kind of thing. Or to speak the same truth from another point of view: the physical elements, in their combining and reciprocal functioning, must organize every physical being in accordance with certain ideal ends. For atoms are not "manufactured," simply to exist themselves. They are *so* made as to serve the higher uses and manifold purposes of the things which are composed "*of*" them.

In man's complete cognitive experience with things, they serve his ends and he serves theirs; and he also observes, or infers, the different things to be serving each other's ends. This is what Kant calls [1] "external purposiveness," or "that by which one thing of nature serves another as means to a purpose." And about this kind of purposiveness he makes the following truly amazing observation: "There is only one external purposiveness which is connected with the internal purposiveness of organization, and yet serves in the external relation of a means to an end, without the question necessarily arising, as to what end this being so organized must have existed for." This is the organization of the sexes in their mutual relation as propagators of their kind. But a more refined biological study of this very example leads us to see that the entire system of plant and animal life is one complex

[1] Kritik of Judgment, Part II., Appendix, § 82.

net-work of relations under the principle of combining internal and external purposiveness, in order to carry out an indefinite variety of nearer or more remote ideal ends.

Nothing is more mysterious and impressive than the interaction of natural forces — both those that are internal to the organism and may be called vital, and also those that are external and may be assigned to environment — in the propagation and development of species. Small wonder, indeed, that Schopenhauer found in this arrangement some of the shrewdest devices of the "Will-to-live," in its subjugation of all existences, under the limitations of space, time, and causation, to its eternal and relentless purposes! It is not the single pair alone that is concerned, in a purposeful way, in the interests of the perpetuation of life. Biological evolution regards every thing, and every transaction of the physico-chemical order, in the light of this conception of "Life," and of the progress of living forms toward higher and still higher life. Thus, under the conception of ideal ends, modern biology arranges all the beings and transactions of living and non-living things as somehow terminating in man. Arrived at this stage in its pursuit of the final purpose of the world's course, it does not stop here. It transfers all the principal conceptions and fundamental laws of biology to the life of the individual man, and to the life of the human race in history. Undoubtedly much of this so-called science, whether it take the name of "genetic psychology," "anthropology," or "sociology," amounts to rather a vague and uncertain generalization of facts that belong to man's descriptive history, — the expression of which in accurate terms discloses no little illusion and use of misleading and inapplicable figures of speech. For it is by no means self-evident what that corresponds to any actual processes, or to any real connections, is meant by such phrases as "heredity," "survival of fittest," "struggle for existence," "*generatio univoca*," and "*generatio æquivoca*," "epigenesis" and "biogenesis," etc., when applied to these not strictly bio-

logical sciences. But that the concrete beings with which the theory of biological evolution primarily deals are "organized and self-organizing," there can be no doubt. Thus this theory distinctly extends what Kant called the conception of "external purposiveness" over all the phenomena which it attempts to handle. Thus the most thorough biologist, from the topmost peaks as his scientific standpoints, describes the meaning of that part of the universe which his science gives him to know as already past, — in the words of Browning: —

> "So far the seal
> Is put on life; one step of being complete,
> One scheme wound up; and from the grand result
> A supplementary reflux of light,
> Illustrates all the inferior grades, explains
> Each back step in the circle."

From the same point of view the man of science looks forward, and in the name of science confirms the hopeful predictions of the same poet: —

> "For things tend still upward, progress is
> The law of life, man is not Man as yet."

There are always —

> "August anticipations, symbols, types
> Of a dim splendor ever on before
> In that eternal circle life pursues."

To object that such forms of knowing the relations of things, and the series of changes that are taking place in the world, are mere statements of fact, and may be wholly abstracted from the idea of final purpose as necessary to explain the fact, is a complete mistatement of the case. For the general fact is itself precisely this: the fact of a series of infinitely complex and constantly changing transactions, entered into by all the concrete beings concerned, in such a way as actually to realize ideal ends. That is to say, *facts of the sort which the theory of evolution considers* cannot be

known at all, otherwise than in their relation to some teleological conception. The meaning of the entire series of facts, as actually arranged and viewed in the light of the ideal ends to be secured, is essential to the knowledge of the facts themselves.

Any one instance of the requisite kind, when all that is implicated in its description has been critically considered, is quite enough to show that "external purposiveness" is everywhere an actualized idea in Nature. Let one reflect, for example, over the following description of the manner in which the "Perigord Truffle" realizes its "will to live," and to possess as much as possible, according to its own nature, of that Nature from whose womb it springs. The following is said to be its behavior, "for a fact:" "The spores of the truffle are of different sexes. In favorable conditions, and after rupture of the envelope of the mother-cell that incloses them, the male spores emit a thin, translucent filament, terminated by a spore of secondary formation, a pseudo-spore, in which the fertilizing plasma is contained. This pseudo-spore, whether it remains on the surface or is formed under the epidermis is impelled, as by a mysterious instinct, to move out toward a female spore, which it reaches either directly or by putting forth a new sprout. . . . The fertilization, which may begin a week after the spores have been set free, ordinarily takes one to two days. When it has been accomplished, the female spore gives out what are called teleutospores, which, falling to the ground, give rise to the mycelium or thread-like vegetation, more or less temporary, which in its turn produces the tubercles."[1]

Nature abounds in just such series of facts as that above described. Indeed, this is what is meant by "Nature," in the larger significance of the word; — namely, a vast and intricate system of beings that have been during indefinite time, are now, and will be, moving onward in a course of realizing, one

[1] Taken from "La Nature," Feb. 12th, 1896.

after another, an indefinite multitude of ideal ends. These ends are far too numerous and intricate for man fully to know. The one ultimate and supreme end, if only one such there be, the human mind may easily enough be far from able to define or even dimly to descry. The final purposes of this system of beings are as intricate and even more hidden than are its efficient causes, and its net-work of so-called laws. But sooner will we follow Clifford in his dream-like theory of a universally diffused "mind-stuff," or Fechner in his theory of souls in plants, than believe that the structure, development, and relations of things can be understood within the Unity of that process of Becoming which our cognitive experience presents, without recognizing the guidance of nature's forces by immanent ideas.

In a word, the nature of knowledge, as epistemology investigates its problem,[1] shows us how the mind, in judgment, reasoning, investigation, and reflection, illustrates by all its cognitive activities its own immanent teleology. The knower knows his own being and doings as linking him in with all other beings, with the objects known, in the realization of ideal ends. So, on the other hand, all progress in objective knowledge, in the science of the structure and relations of things, as they play their several parts in the boundless and unceasing Process of Becoming, emphasizes the trans-subjective application of the category of final purpose. It is in the use of this category, and in the confidence of his ability to understand Reality in terms of this category, that man's knowledge constantly enlarges its sphere. And were it not for certain objections designed to forestall the more uncertain conclusions from this line of argument, when it is carried somewhat too smoothly over from the metaphysics of physics to the metaphysics of ethics, æsthetics, and religion, it is hard to see why some such theoretical position should not be universally accepted.

[1] On this point, see the author's "Philosophy of Knowledge," Chapter xvi.

Since we must postpone the discussion of teleology within the realm of the higher ideals of conduct, art, faith, and worship, we might safely leave this form of the category of the Idea to take its place among the others in a metaphysical system that aims to build itself upon a foundation of objective facts. But a few words to indicate how the objections — so often presented and answered in the history of teleological discussion — bear upon the positions assumed hitherto, will be found serviceable at this point.

The old-fashioned, external, and *non-vital* manner of regarding the final purposes of nature was brought to a close by the triumphs of biological evolution. Such teleology was made impossible to minds thoroughly imbued with the facts and spirit of modern science. But most of the arguments recently urged against the idea of final purpose as applied to physical realities are as little calculated to remain influential in their original form as were the conceptions they are intended to refute. This is perhaps especially true of the argument from alleged instances of useless, or defective and even injurious organs, within the system belonging to certain highly developed animal organisms. One not invaluable result of much controversy has been that both parties to it, since they have grown wiser as to facts, have also grown less sure of their own immature interpretation of facts. And if theologians have become more inclined to leave biologists and physiologists free to tell what functions particular parts of "organized and self-organizing beings" actually perform, the latter have received some well-merited rebukes for their earlier efforts to characterize as useless, or injurious, certain parts of various organisms. Striking instances are to be found in the history of modern opinion with reference to the final purpose of the so-called "internally secreting glands." Twenty years ago it would indeed have required extraordinary courage to affirm that human life could possibly be maintained in default of the functions of the stomach, about the use of which

in the economy of the human body, no room for doubt seemed possible. At that time, however, it was not at all "unscientific" to consign to the class of worthless or injurious lumps of tissue, as remnants of past stages of evolution, the thyroid, para-thyroid, and auxiliary thyroid glands. But it seems now a demonstrated fact that the highly complex organism of man can continue its existence after losing the services of the central part of its digestive system. On the contrary, recent discoveries show that, in some manner which awaits detailed explanation, these more obscure and smaller gland-like portions of man's body are absolutely essential to the vital physiological rhythm of the entire structure. He that loses these despised bits of matter dies more surely than he that loses the more imposing organ. With this discovery comes the proposal to *use* thyroid glands, excised from our humble brethren the sheep, *for* the cure of monstrous diseases of the same glands, and their dependent tissues, in man. Nor does the medical expert think fit any longer to sneer at this example of the way in which the lower animals are actually made to serve the final purposes of man, — at least, until perchance he hears of some theologian suggesting that God gave thyroid glands to sheep for this express purpose. Possibly in time it will be a matter of equally well assured knowledge that thyroid glands in sheep have both an "internal" and an "external purposiveness;" and that the two final purposes, if not to be defined in any single sentence, are not by any means necessarily contradictory.

The pineal gland too has had a not uninstructive history during the recent years of active physiological research. After falling from the high estate given to it by the Cartesian philosophy, which found there a fitting seat for the soul, it seemed entitled only to the rating accorded to any useless fold of membrane, — a senseless bit, left over from those processes by which nature had worked her way upward to that most wonderful of all her products, the human brain. But

recent investigations here also tend to show that this part of the organism, which bulks little and puts forth no sign of any purpose to serve definite wants, is, after all, a very essential part of the cerebral substance. Meanwhile the honors for abject uselessness, and even mischief-making functions, must probably be awarded to the human *appendix vermiformis*. It would be well, however, to reserve final judgment about this piece of "organized and self-organizing" matter until further more definite information has been obtained. Doubtless — to take another example — it may be held, in view of present facts, that plant-lice were made for ants to pen up and milk as their cows, and for lady-bugs to feed upon entire; while in this way the ants themselves render services to man in a slight measure compensatory for the mischief they otherwise do, and the lady-bugs become his valuable coadjutor in the culture of roses; etc., etc.

Jesting aside, the argument *ab ignorantia* in general, whether urged for or against the principle of teleology, is an increasingly unsafe argument for the student of Nature. Indeed, such an argument would seem to have no relevance to the conclusion aimed at. For this conclusion is not to the effect that man knows, or ever can know, all the final purposes of nature, or of any one natural object, or even of any portion of any object. The teleological argument affirms the rather that the recognition of ideal ends, of internal and external purposiveness in all things, is an integral part of our fuller knowledge of them; and that we find things, in fact, answering to our repeated and persistent attempts to make their acquaintance in this way. No sooner is any startlingly new natural product, or force, or transaction, or relation, discovered by the mind of man, than he begins to raise his questioning after one or more of the final purposes involved. And the answers he gets to this questioning swell the bulk and improve the quality of the current stock of human knowledge. Is not the world of physicists just now interested in the mixed theo-

retical and practical inquiry: What ends, in the world of things, are served by X-rays; or by liquefied hydrogen? And, if the former can be seen to serve surgical science, and the latter to improve the art of producing explosives, we shall know more about both. The thinker is as truly convicted of the attempt to reconstruct an obsolete "carpenter theory" of Reality who denies the immanent presence of ideas in their known realizations of the factual order, as is the thinker who tries to reduce the causal explanation and total significance of the X-rays, or of liquefied hydrogen, to these two limited forms of human ideal ends.

Substantially the same points of view must be maintained when it is discovered that much of the mechanism of nature is defective, or injurious, as regards the realization of certain human ideals. Here the ordinary jests of the opponents of the principle of teleology become sorry enough. For example, that oft-repeated declaration of the German professor, who declared the human eye to be so poor a piece of mechanism for the purpose of perfect vision that he would not accept its like from any maker of optical instruments. This particular jest would be no less sorry if it could not easily be pointed out that a *perfect* optical instrument would be of comparatively little practical use when set in the human forehead. For it is just that self-adjusting, that vital and perpetually "self-organizing," activity of this organ which most compels the intelligent recognition of its internal and external purposiveness. Nor is the purposiveness of this organ the less, but vastly the more impressive when we trace its evolution from the beginning, and its multiform self-adaptations to the great variety of organs and of environments in which its purposes must be attained. Were this not so, however, defective organs may be no less purposive than are perfect organs. In order to maintain the application of the idea of final purpose to all the known productions and transactions of nature, it is not at all necessary that she should be considered as ideally

exact in her work. If she seems to waste her tools, so does she also seem to waste her energy. And time, with its infinite opportunity for repeated trials in the effort to perfect her work, belongs without limit to the opportunity of nature.

Nowhere else is the current logical inconsistency with regard to the teleological conception of nature more apparent than in certain circles of biologists. As students of a natural science, they are eager to throw the light of ideal ends upon every portion of natural mechanism, and upon the whole course of nature's working from the remotest discernible, or conjectural, past down to the present hour. Each individual plant and animal is described by them as a beautiful whole, illumined in every part by the light of the ends served by each part. Teeth, jaws, intestinal tract, muscular connections of the limbs and the terminal claws, have mutually reacting functions as bound together by the principle of internal purposiveness. But these same organs, as related to the preservation and development of the individual and of the species, serve as instances of external purposiveness as well. Modern evolution makes no complaints over waste of life, or waste of time, or suffering through fierceness of struggle, or extinction of many species and exhaustion of many environments, if only the great totality of the World-Process may go on toward its obscure and far-off goal. But let attention once be directed from the actual causal efficiency of the mechanism definitively to the *ideas* that set the ends to the mechanism, and let the suggestion be made that these ideas, too, must somehow find their resting-place in Reality, and how quickly is the attitude changed toward the teleological explanation. That Nature (or, if you please, God) should "deliberately intend," should "will in conformity to ideal ends," that animals should struggle ceaselessly together, should devour each other, and proceed upward in the biological scale only by rough and blood-stained paths, — that Nature should behave,

indeed, as scientific evolution claims that she has behaved, — is now made the occasion of scornful denial or of flippant jest. But why should this be, unless it involves a recognition of the potency, in the interpretation of the objective facts, which belongs to man's æsthetical and ethical ideas? Nature has not indeed brought forth, from her prolific womb, her children in accordance with the most refined ideas of the more highly correct way. She has not followed modern bedroom or drawing-room manners in her conduct of life. But this very criticism itself is a positive proof of the inescapable character of man's cognition of all things. He will not be thwarted in the general obligation to ascribe ideal ends of some sort to natural processes and to natural developments; but he may well enough practise caution, and confess ignorance, when asked to declare what, in particular, these ends are. Such a limitation, however, belongs to man's science quite as much as to his ethical and religious faith. Its lesson may well be that Nature (or God in nature) must be taken as you find her. The final purposes she follows are to be learned from her, not dictated to her.

It is in connection with the modern idea of mechanism, and the extension of this idea to a complete supremacy over the whole realm of concrete existences, that some of the stoutest objections have been raised to a teleology which advocates rather a supremacy of ideas of ends. To these objections, it has been customary for a certain class of writers to answer that the two principles are not mutually exclusive; mechanism and mechanical causation, on the one hand, and purposiveness and ideal aims on the other hand, may at least coexist, if they do not assist each other. Kant, however, claimed that the union of these two principles is not rationally comprehensible.[1] The principle of mechanism must be held as the universal and necessary — the *a priori* — form of all cognition of physical events; the principle

[1] See the "Kritik of Judgment," Part II., Appendix, § 81.

of purposiveness is only a tenable article of a faith which answers to the need that God, as the postulated moral World-Cause, should thus render an obvious support to the keeping of the moral law. We know that things actually exist, and events really happen, under the principle of mechanism; we are entitled to act *as though* physical things and events, were parts of the ideal plan of a righteous and almighty Ruler, in the interests of the moral development of mankind. In all his discussion of these two principles, in their mutual relations, Kant gives away with one hand far more than he need, while with the other hand he takes back far more than he can rightfully claim or successfully hold. We are warranted in going far beyond the Kantian teleology with the claim that the purposiveness of Nature — both internal and external — is a truth established by all man's growing knowledge of natural things and natural events; but we cannot rise, as the great critic does, with one gigantic flap of the wings of faith to the serene heights of a confidence that man's moral development is the sole, supreme aim of the entire system of natural things and natural events. To reach these heights requires a prolonged critical examination of the foundations and the trustworthiness of man's ideals — ethical, æsthetical, and religious.

The entire substance, as it were, of the philosophy of knowledge and of the general philosophy of the Real, guarantees the very opposite of the Kantian position respecting mechanism and purposiveness. Without union of the two principles, whose union the author of the Critique of Judgment declares not to be "rationally comprehensible," no rational and valid comprehension of the products or the transactions of Nature is possible. The conception of mechanism cannot be held even in its most meagre and outline form of statement, without implying the conception of final purpose. And the most elaborate and comprehensive form of the mechanical theory — the modern scientific and all-inclusive theory of evolu-

tion — does not at all dispense with, but rather enhances and applies in multiform ways the ideas of teleology.[1]

By what has just been said we mean to advocate the necessity of taking a position which goes beyond that taken by Lotze in the "Microcosmus." The design of this work, says its author,[2] is to show "how absolutely universal is the extent, and at the same time how completely subordinate the significance, of the mission which mechanism has to fulfil in the structure of the world." In Lotze's opinion the mechanism which science investigates and portrays only serves as the means which the Idea assumes for its own realization. What we have attempted to show, however, is this: *The principle of mechanism and the principle of purposiveness are, epistemologically considered, the same essential forms of the Self's functioning in cognition; and they are also both, ontologically considered, essentially the same forms of the world's Self-like Being and Life.* "Mechanism" means nothing less than this: a system of individual existences which act and react upon one another, according to forms, and in obedience to laws, that are necessary to the attainment of ideal ends. No such conception as a "mechanism of nature," or a "structure of the world," is tenable without the implicate of purposiveness. A critical metaphysics has, therefore, no need to effect a union, or apologetically to harmonize a seeming conflict, between these two principles. The two *are* in union, essentially one and the same, both as noëtical and as ontological principles. Both affirm one and the same great truth; man knows Reality only — but knows It indubitably — as a system of causally connected beings and transactions conforming to the ends set by "immanent ideas." Ideas are essential explanatory principles of all that is real; no real being exists, or actual transaction occurs, as cognizable or conceivable by man, without the causal influence of ideas. To talk of conflict here is foolishness; to attempt reconciliation, there is no need.

[1] Comp. Wundt, "System der Philosophie," p. 326 f.

[2] Introduction, near its close.

Nothing in all the development of the Kantian philosophy is more interesting than are those concluding portions[1] of the Critique of Judgment in which this masterful critic discusses the "Methodology of the Teleological Judgment." Here the real Kant comes to the fore, — the man of intense and profound moral convictions and of deep and sincere religious nature. At the end of its long, reiterative discussion of the principles of all scientific and philosophical knowledge, criticism essays the world-wide, heaven-high, and illimitably deep inquiry after the "ultimate purpose of nature as a teleological system."[2] At once the founder of the modern agnostic stronghold leaves the advantages of the position in which he has intrenched himself; on the wings of moral faith he soars away beyond all the confines of time, of space, and of the sensuously and cognizably real. No religious fanatic ever exhibited more than does Kant, at this point, of that splendid courage with which certain minds answer the appeal to turn from the known actual to the realm of unknown and unknowable ideals. With an authority patterned after the form of mathematical and physical *a priori* demonstrations, the critic assures us that man *must find* in himself the ultimate purpose of nature, and that his moral culture alone *can be* this ultimate purpose.

The positions taken by Kant in the passage just quoted cannot be argued to a satisfactory conclusion on grounds of a general metaphysical system. They require, as has been said already, all of the light which can be shed upon them from studies in ethics, æsthetics, and the philosophy of religion; and where Kant becomes most ready to transcend the limits of man's knowledge, we may well enough begin to temper our confidence in the conclusions of our cognitive powers. For neither of the three theoretical statements which his positions assume can be made either a matter of

[1] Marked, indeed, as an Appendix in the second edition.

[2] Part II., Appendix, § 83.

objective knowledge or a matter of incontestable moral and religious faith.

It is indeed given to man to know the world of concrete real beings and of actual events as falling under the principle of final purpose. This world is known to be a teleological system, a construction controlled by immanent ends. But it is not given to man to "know" what is the one *ultimate* end of the world; or whether the world's cause has only *one* such end; much less, whether this one ultimate purpose of Nature — of the world's system and course of things and of selves — is the realization of man's *moral* ideal, as Kant conceived of it. With regard to each of these three teleological problems, — although they are all essential factors in the one problem of teleology, as this all-inclusive problem is viewed in the Critique of Judgment, — only the better hope or the more reasonable opinion is, at best, attainable. For neither of the three can rightly claim the dignity of a postulate of moral reason; nor is either of them essentially connected with any so-called "ethico-teleological" proof for the Being of God.

First, — and strictly speaking, — an "*ultimate*" purpose of the world's being and course, as such, may well seem something unattainable and even inconceivable. The End to be attained cannot be regarded as the complete cessation of the process of its own attainment. The ultimate purpose of Nature cannot be a statical condition. The very idea of teleology is an incitement to strive on and live on; the idea itself perishes in its own completed realization. To be sure, individual men get tired and come to consider Nirvâna as the ultimate ideal; or they get pessimistic, and regard the condition, when the world shall be a burned-out coal, as something devoutly to be wished. But the World itself is not tired; and the strictly "ultimate" purpose is always beyond where man's hope and faith — not to say, man's knowledge — can go.

Moreover, second, the most ultimate purpose which we can conceive is not *one* purpose; it is not an ideal end that can be brought under any strict unity of conception. Some sort of a Unity, the final purpose of the World's course undoubtedly must be. But the higher the sort of unity is, the more complex and inclusive is it of every conceivable form of good; — and of yet more beyond. Who shall define to knowledge, or describe to faith and hope the single, the *alone* ideal end which it shall seem a worthy end of all the world's Force to realize through the infinite Life of the world's time? A certain singleness of aim is necessary for the physical and mental resources of finite mortals. Yet there is no real thing so mean, so limited in resources, so meagre in time, and so single-handed in service as not to have many ends to attain. The only worthy aim which the most exalted human intelligence can set for itself is to play its assigned part well everywhere in the infinitely varied and ever changing system of selves and things. This is the true service of Self, of the World, and of God; but its unity is best expressed in an indefinite variety of actual transactions, and of diversified forms of being.

Nor, finally, can man attain the assurance of faith that his own *moral* culture forms the one ultimate purpose served by the Nature of which he is, or esteems himself to be, the crowning product. No word of ours shall ever depreciate or minimize the moral Ideal. Without its light to shed upon the course of physical things, down to their lowest depths and into their minutest details, this course is darker than it otherwise need be. But not even the most exalted religious faith which raises man to the rank of a child of God, and grasps, as its supreme ideal, the redemption of the race, justifies exactly the confidence which Kant assigns to this postulate of reflective teleological judgment. Indeed, the conception of "moral culture" may be so pressed as to divide human nature against itself, separate human nature from other nature, and even take man out of sympathy with the

well-being of God. For man is not all ethical, in the Kantian conception of "the ethical;" neither is the ethical so strictly set apart from the natural as that the one can dispense with the truths of the other. Nor, finally, is God an unattainable *Ding-an-Sich* to knowledge, but a necessary postulate of moral realities; and yet altogether without a warm and vital co-conscious indwelling in his own children.

The conclusions of our discussion of the teleological principle, so far as they bear in a preliminary way upon the general problem under investigation, may be briefly stated. They advance one stage further the final conclusion that the world of things and of selves is an Ideal Reality, constituted after the analogy of the self-known Self; for it has been shown that the idea of final purpose is *known* as not belonging merely to the "Appearance" of the world, but as the universal and essential characteristic of its "Reality." This conclusion is, indeed, only a further extension of that knowledge of what all things and all selves actually are, which includes also the conceptions of form and of law. Knowledge, both of selves and of things *is* knowledge of their forms and of the laws which they obey. Equally true is it that knowledge of all real beings *is* an acquaintance with the reciprocally dependent functions of their elements, factors, or parts, of the adaptations they display, the adjustments they perfect, and the courses of mutually assisting or hindering development through which they pass. But this is nothing else than the teleological knowledge of Reality.

Translated from the figures of speech which ordinary and scientific knowledge are fully justified in employing, all such terms as "form," "law," "function," "specific variation," "effects of environment," etc., testify to the same ultimate truth of metaphysics. *The World is known by man as a system of beings, mutually interacting in a process of becoming for the progressive realization of ideal ends.* If, then, we represent the infinity of the World's Being at any moment of its exist-

ence by the proper symbol (∞), and its eternal Life and process of Becoming by a series of such symbols (∞_1, ∞_2, ∞_3 . . . ∞_n), the coefficients attached to these symbols may then be arranged so as, in their relations to each other, to symbolize the "final purpose" of the World. Its one ultimate final purpose, if such there be, remains the insoluble problem indicated by the coefficient of an irreducible X.

If, however, by increasing our knowledge of the relations of the coefficients in the World's course, so far as that course can become known to us, we arrive at a reasonable conjecture as to the meaning and value of this X, we are entitled to add also this conjectured meaning and value to our metaphysical system. Such a value to the X is afforded by the hope and the faith attained through the thoughtful study of the philosophy of the Ideal in the forms of conduct, art, and religion. Thus our Theory of Reality embraces the Ideas which the Will of the Absolute is setting into the World's actual historical development. That this Will is guided by ideas of ends to be gained in every form, law, and relation that are served by the objects of man's experience is a truth belonging to all man's objective knowledge of the World. This World is, fundamentally considered, known to man as a Will guided by immanent ideas; and among these guiding ideas are the ideal ends, already actually secured, and to be secured, by the action of this Will.

CHAPTER XV

SPHERES OF REALITY

THE detailed critical analysis which is necessary to found upon the cognitive experience of men a defensible Theory of Reality has been substantially finished. In the attempt to frame such a theory we began under the impulse of that craving to which Matthew Arnold so aptly referred: "We want first to know what *Being* is." This is a want, however, which can never be satisfied either wholly without, or solely with, regard to what all men know by the senses and by self-consciousness, or to what a few favored individuals know by aid of the advances of the particular sciences. Metaphysics, on the one hand, in order to have truths about realities at the bases of its structure, must build on the facts and formulas of our common experience. But, on the other hand, in order to apprehend aright and to fulfil its mission, metaphysics, after subjecting its varied materials to critical inspection, must carry its structure upward toward that one Truth of Reality which unites all these subordinate truths in itself. Thus the perfection of metaphysical system requires that speculative and reflective synthesis should follow critical analysis.

In accordance with our conception of correct method, reflective analysis has been employed in the effort to show what, as to the actual nature of particular beings, is implied in the very terms under which they are always, and necessarily, known by man. It is indispensable here only briefly to summarize the results of this detailed analysis. Every individual,

concrete reality (whether a so-called Self or a so-called Thing) has been seen to unite in its being, as a necessary precondition of its really being at all, every one of the categories. Concrete realities are particular combinations of the categories. Thus, "being in reality" is never a simple and easily intelligible affair; the rather is it always an affair which requires, for its simplest apprehension, all the faculties of the developed mind, and which, for its perfect comprehension, far surpasses the limits of the most expanded mental development. But our experience is no warrant for the agnostic conclusion, that man knows not what it is really to be; it is rather token of the inexhaustible wealth of the content of Reality. It is also a sign that the completed, or perfected, knowledge of any concrete reality would seem to involve the essential significance of all that is real.

The moment, however, an attempt is made to translate into their ultimate significance those terms which man is compelled to employ in the description of what he knows real things to be, the virtual character of all human knowledge becomes obvious. The knower has somehow attributed to things, regarded as trans-subjective and independent of his knowledge, those qualifications which he knows himself to have and to exercise in his more immediate and mutually dependent relations with things. That is to say, all man's knowledge of what things really and, as it were, "in-themselves" are, is gained on the basis of his right to judge that the real being of things is essentially similar to his own.

Our previous analysis of the categories has verified the foregoing postulate in all its essential particulars. In knowing himself as really being, and actually doing, man comes to know the reality of the being and the actuality of the transactions of things. He, the knower, is conscious of self-activity, which is inhibited by a "that-which," not to be identified with the Self. This "other," this "non-self" is accordingly known as self-active, and yet as always inhibited

by beings that cannot be identified with itself. Man is also conscious of actively relating himself, and of becoming passively related, either without or in spite of his will, to all other things. These other things, too, are known as being in real relations after the analogy of the observing, judging, and thinking Self. Man is conscious of force as followed by changes in himself and in other beings, in conformity with ideal ends. These other beings, too, are therefore known as employing their forces, within themselves and upon one another, so as to change themselves and to induce in one another changes that conform to established types, or laws, or functions, or mutual services, — that is, to ideal ends. Man measures and enumerates the different ideally separable "moments" in the one stream of his consciousness; he thus knows his object-things as actually having quantity and number belonging to them. He then employs them to judge and to estimate one another. He is conscious of the flow of his own life in the so-called stream of time; but this flow is objectively determined; and he, therefore, knows the life of things as occuring and lasting in the same stream of time. And although the essential character of that space in which all thing-like beings have their existence and their changes seems, of all the foreign conditions of things, most foreign to man's own self-hood, this character also proves, after all, the same important truth. For the knower knows himself as entering into actual relations with other beings — even with other selves — only under the formal conditions of space.

When, therefore, a critical analysis has laid bare the significance of the categories, for all men's knowledge of reality, we see that things are not essentially foreign to the self. For we see that they join with the self in furnishing the manifold principles of differentiation which are needed for the manifestation of the Idea in a system of inter-related selves and things. And the deepest significance of this common use of the categories, in their joint application to selves and to things,

becomes apparent only when the truth is recognized, that the one fundamental distinction which the act of knowledge must maintain is the distinction between the knower and his "other" — the object known.

It is, then, in a profound and comprehensive conception of Selfhood, its nature and its validity, that metaphysical system must find the means for a synthesis which shall be faithful to all the facts and truths of its critical analysis. This is a conclusion which has been gradually gathering and strengthening in our minds during the long course of previous epistemological and ontological discussion. Especially insistent has this conclusion seemed during the later stages of the discussion. For these have made it apparent that all the attributions of form and law, and final purpose, which both the ordinary and the scientific knowledge of man finds it necessary to ascribe to things, are essentially ideal. They are ways of the self-recognized behavior of man in all his action and development, amidst the environment of natural objects. They are necessarily attributed to these objects, and to Nature at large, as defining the character of the reality in which she includes them all. But this means that all natural objects are known to man only in terms of his own selfhood; and that Nature is known as Will which is progressively realizing its own immanent ideas. To change the phrase, without intending at this point to change the doctrine: The World of beings, both selves and things, is known as having its essential reality in being an "Absolute Self."

The phrase just employed — "Absolute Self" — has already several times been referred to, in the analytical criticism of the categories. The conception answering to the phrase has, indeed, thus far been left in a vague and unsatisfactory form. The moment one proposes to subject it to the tests of reflective criticism, one is made aware of an attempt to cross what not a few will consider to be the limits of human knowledge and even of legitimate speculative endeavor.

In our judgment, too, it is not permissible, and it is, as a rule, the opposite of truly serviceable, to claim such a degree of objective certainty for this conception as to identify it with the sum-total of all Reality. That I immediately *know* the entire system of all known and conceivable beings in terms of an "Absolute Self" is not a conclusion which follows in a strictly logical way from what has been accomplished by the previous analysis. Yet some such synthesis as this may be made valid by this analysis; and the synthesis may be so connected with the analysis as to afford a Theory of Reality that shall repose on foundations firmly laid in the sum-total of man's cognitive experience.

To further the interests of successful speculation, two lines of effort need to be followed in the interests of improving the conception just introduced. The first of these is the effort to perfect the conception itself. Its content needs to be made more clear and self-consistent, and its value must be raised to higher potencies and grander measures of extension. For the question whether the noun and the adjective here joined together do not refuse all vital union — whether to speak of an "*Absolute* Self" be not a contradiction in terms — is not altogether a vain question. Especially is it necessary if the conception of selfhood is to be extended so as to cover all the objects of man's knowledge, in their mutual relations and in their extension over all times and spaces, that this conception shall itself be worthily conceived.

But, second, it must be our effort to place this conception of an Absolute Self, as summing up all man can know, or think, that is highest and best about the essential Being of the world-system, in satisfactory theoretical and practical relations with the facts it is intended to explain. The particular selves and particular things man knows — imperfectly, to be sure, but with a continuous increase in the depth, breadth, and certainty of cognition — belong together in the great system of which they are all members or parts. We

have found ourselves constantly approximating the conception of an Absolute Self, as the endeavor has gone on to understand the ultimate significance of all these particular cognitions, and the ultimate nature of that reality to the unity of whose being the particulars belong. But such progress only leads the mind nearer to that philosophical problem which, says Lotze,[1] "we may therefore consider as the final problem of Ontology — a problem not yet satisfactorily solved — this inquiry after the connection between the necessary Unity and the alike necessary manifoldness of the Existent." Or, as it seems to us better to express the problem: What are the relations in reality between all the particular beings, which are known under the formal conditions of space and time, and that Absolute Self whose Being must be so conceived of as to offer the explanatory principle of all that they are, and do? In the attempt to solve this problem, different thinkers lay emphasis on ideas of "identity," or "manifestation," or "realization," or "evolution," or "creation," etc.

To frame a consistent and worthy conception which shall synthesize all the legitimate conclusions of metaphysical analysis, undoubtedly requires assistance from reflective thinking upon human ideals. The highest and worthiest selfhood with which man has acquaintance is the Self that is self-active in pursuit of the ideals of knowledge, of conduct, of art, and of religion. This is our real being, as known to us to be a spiritual life. Here, in the actual experience of the self, the "most real reality" — if such an expression may be pardoned — and the highest ideality are united. Therefore the work of philosophy in perfecting the conception of an Absolute Self, if this work be possible at all, certainly cannot be accomplished without ethics, æsthetics, and the philosophy of religion. But since these branches of philosophy deal rather with man's ideals than with the concrete actualities known to man, — with actual selves and actual things, —

[1] In his "Outlines of Encyclopædia of Philosophy," close of § 14.

they require and permit larger influxes of the emotional and practical life into their conclusions. It is customary to speak of their invisible and intangible entities as objects of faith, while the invisible and intangible entities of physics, chemistry, and biology are called objects of science, of assured and verifiable knowledge.

It is not the intention of the present investigation to dispute or invalidate some such distinction as that to which reference has just been made. But if the distinction is taken so as to create a schism between faith and knowledge, between the entities that are ideals and the entities that have been shown to implicate the immanence of ideas, between the philosophy of man's ethical, æsthetical, and religious nature, and the philosophy of his scientific and cognitive nature, then all our previous investigation offers a network of insuperable objections. For the foundations of a system of metaphysics reach down to the ultimate and universal facts of man's cognitive experience; and in examining these facts we are made to know that man is an ideal and spiritual being, and that this ideal and spiritual being essentially modifies his knowledge of every form and semblance of reality. As a Spirit, or Mind, man knows the reality of himself and of all other beings.

It remains, then, to carry the structure already begun up to the place where the more definitive forms of human ideals — ideals of the ethical, artistic, and religious Self — can employ these foundations for their peculiar work of extending the superstructure. For the completed work of metaphysical synthesis, it was necessary first to consider what is the known nature of a self, as this being actually exists and knows itself to be, and to be related to its environment of things. If all existences have a *self*-like nature, whether as known under the forms of the most ordinary or of the most strictly scientific cognition, then the more profound and well certified our knowledge of the self becomes, the more shall we know of the true and ultimate nature of all reality.

. But the unity which this conception imparts to all the objects of knowlege must not be conceived of in a way that is incompatible with the real variety of these objects. All things and all selves are known as somehow related — manifestation, emanation, revelation, dependent creation — to an Absolute Self. All things are known only so far as they are conceived of, or envisaged, in terms of the selfhood of man. Yet selves and things must not be identified, either in general or in particular; neither must the individual existences lose their reality by being theoretically merged in the Unity of the World, of which they are a part. In order, then, to reap the legitimate fruits of analysis, and not the rather to destroy or surrender them all, by the act of synthesis, the reality of spheres of being must be maintained. I am; you are; things are; and the Absolute, that somehow embraces me, and you, and all things in his Being, is. To all, the conception of selfhood somehow applies. It is the grasping on to more or less of selfhood which relegates each particular being to its appropriate sphere of reality. It is the absoluteness of the Divine Selfhood, which makes its Unity of Reality include the particular realities of all finite things and finite selves. *The different spheres of reality as known by man are distinguished by the amounts of essential selfhood which they possess.*

The line of argument leading to the supreme synthesis of metaphysics, the philosophy of the real, may therefore be briefly described as follows. In the individual man, and in the human race, the growth of the most immediate and assured knowledge reveals what it is really to be, after the type of the self-conscious knower and doer, in all the varying relations of his changing existence toward his objects — whether other selves or things. Reality is envisaged as a commerce between the self and the not-self, in which the former knows that it is and what it is, and knows that the latter is, and is not itself. But what the not-self really is, becomes known only as it is apprehended after the analogy of the self. All other men are

known to me as not-my-self, but as self-like things — completely self-like, so far as all the important characteristics of the actual being of a self are concerned. Still other things — animals and plants, for example — are known as less completely self-like; yet they, too, so far as known at all, are known only as their existence is apprehended, or conceived of, after the analogy of the self. And in the last analysis, the same procedure turns out to be verifiable in the case of those things that are most unlike the willing, feeling, thinking Self. *Mere* things, "brute inanimate matter" — whatever one may call those forms of existence which give less sure token of being, in reality, of the same kinship with ourselves — are known only on essentially similar terms. They are indeed the least obviously and fully self-like of all known forms of existence. But they, too, so far as known, or even as at all conceivable, are somewhat self-like things. All the qualifications they are known to show, or are conjectured to possess, appear in reality, essentially the same as certain fundamental qualifications of the knowing and willing self.

No matter how much physical science may strive to regard physical beings and events merely as "in-themselves" existing, all the terms it employs still recognize the same metaphysical truth. Of this truth there are both a negative and a positive side. The former recognizes the fact that we do *not* know some of our own forms of being and behavior to belong, in reality, to things; but the latter assures us that all the forms of being, and behavior which we *do* know things to possess are essentially the same as our own. The former and negative position is largely taken in our ignorance. Man — so to say — cannot get into interior relations with things; he cannot hold with them the same satisfying and informing intercourse which is possible between selves. We may even speak, with that sweet saint of the Middle Ages, of our "dear brethren, the birds." But the kinship of being which is between souls and stars or stones does not, on the surface at least, warrant

our going so far as to address them in fraternal terms. Yet the more profound acquaintance which reflection upon the nature of knowledge and the nature of existence brings, makes even more emphatic the positive and informing side of man's cognitive experience with the system of physical beings and physical events. They really are for man, only so far as they show to him the evident tokens of the will and the mind that is in them. It is their actual construction after the pattern of his own self-hood, their substantiality as centres of an activity that functions in obedience to immanent ideas, which makes them knowable, or conceivable, by the human mind.

Combining these two aspects of the same truth — the negative and the positive, the view *ab ignorantia* and the view which embraces all that is called *scientia* — we arrive at a knowledge of the completed whole. *Things are known as imperfect and inferior selves.* They have a smaller share in reality than man possesses. Among the ranks, or spheres, of Being, they lie lower down, as it were. This relative imperfection and inferiority to us must be determined by the relations in which they and we stand to the Absolute Self.

From the epistemological point of view, this doctrine of things amounts to saying that no objects of man's cognitive experience can be envisaged, or conceived of, in independence of the active and ideal nature of man himself. From the ontological point of view, the very same result takes the form of a declaration that all beings in reality have an active and ideal nature analogous to that possessed by man. But this nature they possess, and reveal, in different degrees of certainty and of fullness. First of all, every Self knows with the highest degree of certainty and fullness what his own real being is. Second, and as essentially interwoven with this knowledge, every Self knows what is the actual being of those things that behave most like himself. They are other selves — his "fellows" — belonging to the species, man. Third, all living beings are known as sharing with the Self some of the more

important characteristics of that actual life which the Self knows as its own. And, fourth, there are those non-living things, about whose reality — *that* they are — we often think ourselves most assuredly convinced; but about the actual nature, the trans-subjective characteristics of which — *what* they are — we are most in doubt, and find all our conceptions even the most scientific, very obscure. It is the nature of things, and not the nature of ourselves, which offers the most obscure depths and the more fathomless abysses of mystery.

Within each of these four classes of the objects of man's cognitive experience, there is an almost indefinite gradation of knowledge, both as respects its clearness and its fullness. And between any two adjoining classes the lines cannot at all times be strictly drawn. Different individuals and different races of man have self-knowledge with greater and less degrees of approach to clearness and fullness. The race is advancing, as the history of speculation and of institutions — social, political, ethical and religious — sufficiently shows, in all the knowledge that answers to the very word "Self." This growing knowledge of man's own historical growth, and the facts and principles of comparative psychology, is giving to each student of the subject a less obscure and more broad doctrine of the nature of man. Some portions of the human race there are, whose real nature is as yet scarcely so well known to modern science, as is the nature of many of the lower animals. And biology is constantly revealing new wonders and unsolved problems as to the actual, the matter-of-fact nature of the lower animals and of the plant-life with which the destiny and behavior of the animals are so closely related. Meanwhile physics and chemistry are showing how profoundly mysterious is this so-called "brute and inanimate matter." What a picture do these sciences present! Not "brute" or "inanimate"; it is rather one seething sea of moving, interacting molecules and atoms — orderly, terrible, vindictive yet benevolent, resistless energy and divine Force, in

which, as a universal environment, all selves and all things "live and move and have their being."

All selves and all things are, however, known as constituting some sort of a Unity, and as moving together toward some far-off goal. Their processes of becoming do not take place without principles that compel a certain oneness as well as multiplicity. Their changes are in one space and one time. Their energies are capable of correlation under the conception of one force; but this is not as though they were forms of a single blind impulsion that knows not how to differentiate itself, to combine and to separate, for the attainment of ideal ends. Individual realities are all ideal unities; and yet they belong together in the one World. What sort of a real Being of the world can serve as the correlate of such a well-founded conception of oneness as this? An ontological doctrine or theory must answer this inquiry. We cannot refer this unity to the merely subjective, unifying activity of the mind of the knower. The rather is it a unity which his knowledge compels him to recognize as belonging to the actuality of the system of interacting selves and things. We can provide no other semblance of a satisfactory answer to this problem, which the supreme synthesis of philosophy undertakes, than the answer already suggested. This unitary Being of the World can be secured and accounted for, only if all particular beings are known as having their Ground in an Absolute Self.

In justification of such a metaphysical synthesis as this it now becomes necessary briefly to describe the content of the conception we have employed, and to show that this conception may be made valid for the work which the study of reality requires of it. First: Can this conception of an Absolute Self be made clear and self-consistent? And, second, can it then meet the demands made upon it for service in the realms of Matter and Mind, Spirit and Nature, the Real and the Ideal. To answer these inquiries, so far as general metaphysics can without definitely entering upon the discussion of problems of

ethics, æsthetics, and the philosophy of religion, will occupy us in the concluding chapters of this book.

What right has the searcher for a system of metaphysics so to enlarge and elevate the conception of Self as to prepare it for union with a conception like that fitly answering to the word "absolute"? The answer to this inquiry can be the more summarily given here, because it has elsewhere been made the subject of detailed analysis and reflection.[1]

Study of the history of conceptions answering to the word "Self," or to similar terms, shows them to have been the subject of a most significant development, both in the individual and in the race. This development, like every other which is significant, has not served to simplify and reduce to the low level of a perfectly comprehensible truth, either the conceptions or the reality which is the correlate of the conceptions. The rather has progress taken the direction of enriching the content of human thought, while clearing it of certain internal contradictions and elevating it toward its ideal, and ideally most valuable form. If, then, these conceptions are considered from the anthropologist's point of view, many diverse and curious opinions are brought to light, as to what the known characteristics of selfhood actually are. The personification of things and the materialization of persons are found to result from tendencies most curiously interdependent and mutually involved. All the abnormal conceits and hallucinations of the hypnotic and the insane with regard to themselves have their parallels in views and practices which have been recognized as sane and normal at some stage in the evolution of the race. To write the history of these conceptions in a manner at once accurate and philosophically critical, would be to trace the moral, social, and speculative progress of mankind.[2]

[1] See the author's "Psychology, Descriptive and Explanatory," chap. xxii.: "The Knowledge of Things and the Knowledge of Self;" "Philosophy of Knowledge," chap. vii.: "Knowledge of Things and of Self;" and the entire volume, "Philosophy of Mind."

[2] Comp. the masterly summary of Volkmann, "Lehrbuch der Psychologie,"

If the architectonic of these conceptions be regarded from the psychologist's point of view, one may distinguish the "Material Self," "the Social Self," and the "Spiritual Self;" and one may find all these, and other modifications of the results of reflective thinking, ambiguous and confused, in themselves and in their relations to one another.[1] By carrying the analysis forward in a destructive rather than a constructive fashion, it is even possible to show that no one of the several forms of the self's appearance can be identified with its reality; therefore, it is not a "true form" of experience, and "does not give us the facts as they are in reality," but is a "mere appearance," a "mere bundle of discrepancies."[2] But to leave in confusion the testimony of the historical development of man's conception of his own selfhood; or simply to pass judgment upon that ambiguity in its use into which all men necessarily fall; and, especially, to convict the conception of such internal contradictions as render all its witness to any form of truth absolutely valueless; — all these are, in our judgment, either inadequate or misleading ways of handling one of the most important problems of philosophy.

Two truths, which are established by the historical study, the psychological analysis, and the metaphysical criticism of the conception of Self, need recognition and enforcement at this point. First: the physical, or "thing-like," manifestation of the self is essential to its existence in any kind of relations with other beings, under the formal conditions of space and time. But, second, this very manifestation is itself of such a character as to lead us to the conclusion that the truest and most essential Self is that nature which is envisaged as its own Life in every act of self-consciousness. In the concrete, when thus conceived and stated, one side of the

3te Aufl., I., pp. 54–216; and compare Eucken, "Grundbegriffe der Gegenwart;" and a monograph on "The Development of the Doctrine of Personality in Modern Philosophy," by Wm. H. Walker.

[1] See James, "The Principles of Psychology," I., chap. x.

[2] Comp. the conclusions of Mr. Bradley, "Appearance and Reality," chap. x.

truth of man's experience is this: I know myself as related, under the conditions of space and time, to other things only as I take up into my selfhood the same physical and external forms of existence which all these other things manifest to me. But I have also another side to my self-conscious experience; and this shows me that I am a self-active knower and producer of a continuity of conscious states. These conscious states, taken together, have an ideal value, ideal ends of their own, and a significant connection with one another. It is this cognitive and voluntary realization of ideal ends which reveals to me my inmost being. Speaking popularly, both sides might be said to unite in validating the familiar declaration: I am an embodied spirit, — and so constituted a complete Self in a system of selves and things.

Translated into the general propositions of systematic metaphysics, the same conclusion may be stated as follows: Matter, or the generalized conception of things is a manifestation of Spirit, — the realization of the inmost Being of the World, under the formal conditions of space and time. Thus the true and essential nature of the material world is only known by means of our self-conscious recognition of our own spirits — as the inner and higher principle of cognitive experience. The essential and real nature of matter, in the full significance of the word "Reality," is to be known only in terms of the Life of Spirit.

Carried out into the large, and applied to the attempt of philosophy at a supreme synthesis, these two sides of man's experience with himself, and with things, unite in the following conception. That system of interrelated beings, which constitutes the world as known to man, is the "manifestation," under the formal conditions of space and time, of an infinite and eternal Spirit. How the formal conditions of space and time are applicable to the reality of this Spirit has already been sufficiently explained. The justification and interpretation of the word which has just been chosen (or, indeed, of

any other words which might be chosen in its place) to indicate the relations between the whole world of man's actual experience and its own inmost and true Being, require further reflection. But for the present we may let the term "manifestation" suggest what further reflective thinking must try to define. What is meant by Spirit, however, is, in its essential characteristics, already perfectly clear. A Spirit is a Will self-active in the realization of ideal ends. Spirituality is, then, for us, as individual and finite selves, and for the existences which constitute the unity which we know the world of selves and of things to be, the innermost essence of all Reality.

The truth as respects the individual self is illustrated in the development of every man, and in the entire development of the human race. With the child and with childish men, by the "person" is understood the sensitive, the feeling, thinking, and active body. Such parts of this body as are the more obvious objects of sense-perception or of sensuous imagination may be, by turns, and in accordance with theoretical or practical ends, identified either with external things, or with the real self. They are the factors, as it were, which serve to bridge over the stream of consciousness between the wholly external world, the things that are essentially not-self and yet are liable at any moment to become necessary parts of the manifested self, and those inmost experiences which cannot be separated from the idea of any conscious existence whatever. Thus even the crudest conception of the Self, as related to a system of not-selves, contains the beginnings of that process which eventuates in the doctrine that mind and matter are separated by "the whole diameter of being."

The growth of the scientific knowledge of human nature serves a double purpose in the direction already indicated. The more we know of ourselves, of man, the more clear in character and detailed in particulars does the conception of

his physical organism become. This organism is found to be, in its component parts, precisely identical with other things; from this point of view, it is only one thing among countless others, built up, moment after moment by the constructive energy of the restless atoms. As respects its form, its laws, the causal connections which bind its beginnings, its changes, and its ceasing from existence, in with the great World-Course, the human body belongs to the realm of the physical. The knowledge of it is given in physics, chemistry, biology, — the science of things. But the growth of our scientific knowledge of human nature takes also another direction. This is the direction of deepening, elevating, and enriching the content of the conception of a finite, personal Spirit.

Suppose, then, an answer is required from the most advanced conclusions of the physical and the psychological sciences to the question: What is the reality of the human Self — as involving both body and spirit? The answer, when these sciences have told all that they know or can know, has divided the reality into two parts, so as to give one part over entirely to the world of things, and leave the other part self-conscious although incapable of communication with or of playing a part in this world of things. For the body is known to these sciences only as a system of physical elements which, coming from the great stream of material nature, under exceedingly complex and obscure influences from internal atomic forces and as modified by the action of their environment, attain temporarily a certain morphological and physiological unity; and which go through a peculiar course of development. By Spirit, however, we are left to understand the Subject of a conscious and ideal development which, by its own activity as knower and doer, makes itself a real and unitary being, with non-physical modes of its self-realization. Thus the innermost, the supreme, and the essential reality of the Self — its "in itself being," if so uncouth a phrase may still be pardoned — is the spiritual reality it knows itself to

be in the voluntary and self-conscious pursuit of its own ideals. Its highest real unity is also attained in the same way, — namely by a conscious and voluntary unifying of the life of consciousness in its direction toward selected ends.

But our doctrine of the reality of the human self, as both body and spirit, when left in this, its completed scientific form, lacks the theoretical and the practical unity which it requires in order to meet the demands, both of philosophy and of the life of moral conduct, artistic endeavor, and religious faith. How impotent to effect this required unity, is any conception logically covered under the term "parallelism," we have shown in other connections, over and over again. Mere *parallelism* explains nothing; nor can such a relation eventuate in or even express any actual connection between the events which run parallel, whether in space or in time. *Only real beings, whose forces have regard to each other in accordance with some system of ideas common to them all can effect any kind of actual unity.* But if it be denied that the Self, as both body and spirit is, *in reality*, any kind of a unity, then each stream of human consciousness is so isolated from the Being of the World — from all other selves and all things — that, as a will, it can effect nothing in this world, and as feeling and thinking, it can nohow mentally represent the truth of this world.

It is absolutely necessary, then, for metaphysics to recognize the fundamental truth that man's selfhood, as body and spirit, has its total being in dependence upon that same Unity of Reality to which all other beings belong. This Reality makes us to be the unity we are. It furnishes the vital cement so to speak, the interlacing network of connections which temporarily bind the body and spirit into one self, and also unite this one self with the other beings of the one World. The most immediate and indubitable experience which the mind has of any causal relation is that of the peculiar relation which exists between the spirit and the body

of the individual man, in their correlated actions. Through the organism — and so far as thoroughly well certified experience now goes, through it alone — the innermost and essential self is wrought upon by the forces of the external world. Through the same organism — and so far as thoroughly well-certified experience now goes, through it alone — the innermost and essential self manifests its being, and gets its will and ideas realized by the forces of the external world. The body, which is, from the scientific point of view, but a temporary cross-section, as it were, in the current of the world's physical and non-self-like beings, conditions and influences the stream of cognitive and voluntary states of consciousness. The stream of conscious states, which, in the highest and most ideal stages of its flow, shows to itself the real nature of the spirit, conditions and influences so much of physical nature as it can reach in, and through the body. Thus the self knows itself as a part of physical nature, linked in as a thing with all other things; but thus, also, the self knows itself as a spirit, rising ideally above and dominating over physical nature.

The metaphysics of Selfhood, then, can neither consider man's body as the producer and effective cause of man's spirit, nor consider his spirit as the framer and builder of his body. Nor can it leave the two merely to run parallel, in reality disconnected, side by side. On the one hand, the total human Self perceives itself as a thing-like existence; on the other hand, it envisages itself, as a cognitive and feeling Will, a non-thing-like and spiritual existence. Without the one kind of experience, it could have no real being capable of entering into actual relations of living commerce — giving and taking, putting forth and receiving — with other beings in that system of selves and things which constitutes the known world. Without the other kind of experience the self would be a mere thing; or, rather, without participation in the nature of spirit, neither self-conscious recognition, nor

intercourse between selves, is conceivable. The one all-inclusive Being of the World, the Unity of Reality, is responsible for the union of body and spirit in each human Self, and of each Self with other selves, and of all selves with all things.

If now, however, the language which it has been found necessary to employ in all our explanation of the reality of the Self, as dependent for its being and its manifestation upon the Being of the World, is translated over into the thoughts already provided for it, we are led again to the conception of an Absolute Self. For every characteristic of this Being of the World, in which all concrete beings "live and move and have their being," is constructed after the analogy of the Spirit's cognitive and self-active life, in the pursuit of ideal ends. This is what the previous extended analysis has shown in detail. To have the unitary being, which knows itself as a will that is active in the realization of ideal ends, — in a word, to have true interior selfhood, — this is what we know our own most significant and real existence to be. This is the highest and supremely ideal unity of what we call "Spirit," or "Mind."

Regarded as providing for a unity of force, the real principle, which accounts for the world as known by man, must be conceived of as one Will. Regarded as the ground of all the relations which are recognized as actually existing at any moment in the world's history, this same principle must have "self-consistency." It must provide for that adjustment of innumerable factors to each other, in accordance with the demands made upon each by every other, which is realized in the highest degree by a well-ordered self. Regarded as adequate to that formal unification which characterizes all man's experience of things, as external and extended, as "occupying space" of measurable quantity and so divisible into many beings existing side by side in the unity of the one world, this real principle must be a Will that differentiates

and distributes itself over a variety of individuals and yet binds them together into ideal forms. It must account for the One and the many; it must accomplish the reality of particular beings in the unity of a single system. As the explanation of the entire world's course, and as setting the goal to that process of development of which It is itself the never-failing Source and innermost Life, this principle must give forms and laws to an ontological process of becoming. But the very conception of such a Principle of becoming is realizable only in the nature of a Spirit which can set into reality, as a process in time, its own ideals.

The only true and highest Unity conceivable by man is that possessed, in reality, by the Life of a Spirit. Or, in other words, it is the unceasing, inner activity of the Self, which by self-consciousness, recognitive memory, and rational thinking unifies the different "momenta" of experience, that constitutes the essence of its own unitary being. As we have elsewhere said: "*that, and nothing else is the essence of the unitary being of mind.* With such unity a great variety of so-called faculties is in no way inconsistent. The rather is the unitary being of the mind dependent upon the exercise in the fullest way, of all the faculties; for they are all implied in every act of self-consciousness; the completer their activity, the more truly one is this mind."

That which is known to be true of the most real of all unities sets the conditions under which we must conceive of the Unity that in some sort, the totality of things is known to possess. It is the oneness of the Spirit which is in them which gives to things their ontological Unity. Without this conception of them, the seeming unitary Being of the World is *mere* seeming; it is only the temporary resultant of subjective conditions and of the unifying mental activity of the observer's mind. Without this conception, the World is, in no sense whatever, a Unity of Reality. It does not even possess so much of actual oneness as belongs to the stream of the indivi-

dual's consciousness; and this regarded as *mere* stream is only succession of states, which slips away unceasingly. It never is; it is always becoming. Therefore, the Unity of the entire world's being and course, unless it has reality in the Life of some self-conscious Spirit, consists only of countless millions of separate streams, that never unite in one stream, but keep slipping away unceasingly, in diverse and indeterminate directions.

If, however, we try to take the crudely realistic point of view, then the Unity of Reality becomes nothing but bare totality of countless millions of things — "crude lumpishness" of existences that are void of so much of actual unification as belongs to a heap of grains of sand. Here, again, the instant any attempt is made to give intelligible terms to that unity which our experience compels us to ascribe to things, the familiar talk begins of specific "forms," of "obedience to laws," of "conformity to ends," of "actions" and "interactions" resulting in ideal results, of a course of "development" reaching onward toward some far-off goal. But all these are terms which have meaning only for a Spirit, conceived of as a Will energizing so as to set into reality its own ideas. In brief, to ascribe any Unity in Reality to the multitude of concrete beings and transactions of the world as known to man, is to affirm that this world is the manifestation of a Spirit's unitary Life.

For the fuller interpretation of all such words as are designed to indicate the relations existing between the Being we have called an "Absolute Self" and all finite selves and things, we must ask the patience needed for a brief waiting. At the present moment we wish briefly to state the conclusion at which it was desired to arrive by the discussions of this chapter.

1. As regards the nature of Reality, the sphere of man's assured and defensible knowledge is, both for the individual and for the race, one of enlarging extension. This is true, whether the particular kind of reality sought, be that of one's self, — body and mind, — or of other selves, or of material things. What sort of a being the human spirit really and

essentially is, will constantly become a subject of clearer and better certified knowledge; man knows himself as spirit, with an increasing wealth of content and assurance of conviction. Modern science is throwing floods of new light upon biological problems, hitherto obscure or even undreamed of; and all this light is reflected upon that most complicated of all living forms, the bodily organism of man. Historical, anthropological, and psychological researches are increasing the world's stock of information regarding the actual nature of man, in his sexual, political, and other social relations. Although the term "social self" is a complete misnomer, and the use of the term even with a figurative reference likely to be mischievous, certain truths for which the conception stands are firmly established. Meantime the chemico-physical knowledge of *mere* things so-called has been growing apace. And all the growth in spite of many deficiencies, gaps, and discrepancies, and of much admixture of error, cannot be denied to have reference to the evolution of man's knowledge of Reality. The field won at the expense of so much human toil and suffering cannot be surrendered to those who plead either the mistakes and limitations of science or the doubts and denials of an agnostic philosophy.

2. It may also be claimed, as an assured result of human knowledge, that all the beings and all the transactions of the world constitute some sort of a unity. All so-called laws, indeed, seem to admit of exceptions. Strictly demonstrative proof is nowhere applicable in the attainment of knowledge as to the universal and unchanging nature, even of physical beings and physical events. Wandering stars there are; kinds of atoms that seem not to enter at all freely into the mixtures upon which the existence and the serviceableness of things depend; monsters that appear as whimsical departures from the onward march of life towards its crowning achievements; caprices in the conduct of nature not a few. Human history and human development, not infrequently, seems void

of all control under intelligible ideas. Yet the totality is a Cosmos, an orderly whole; the world's course gives increasing tokens of a movement toward some sort of an ideal and unifying end. Reality is, in its trans-subjective character, — as regards its "in-itself" Being, — a Unity; it is not merely the shadow cast on a dark background of chaos, by the unifying *actus* of man's conscious mind.

3. But what every knower knows most immediately and assuredly — by an envisagement which carries with it a clear but incomplete picture of the "what," and which attaches this picture to the consciousness of a "that" — is the here-and-now being of his self-conscious, willing, and cognitive Self. Analysis of the nature of knowledge shows that in the cognitive process itself all the spirit of man — intellect, feeling, and will — takes part. For *this highest and most assured knowledge is the envisagement of the nature of reality as a self-conscious spiritual life.* Further analysis of those characteristics which all men agree to ascribe to external things shows that their reality, too, is known — though much more obscurely and with fainter conviction — as consisting in the possession of characteristics like those which the knower knows himself to have. And even as the individual man comes to regard his own body in its manifold relations to the life of the spirit that "is in him," he finds the same truth exemplified. This body is a thing among things; but it joins the spirit in the temporary work of constructing the unity of a Self, because it, too, partakes in the characteristics of spirit — though not identical with the spirit of the self-conscious knower. It is a loan from nature, borrowed on terms which indicate that the temporary partnership thus formed is significant as to the real nature of the human body as well as of every other thing.

4. And, finally, the object which the supreme synthesis of reflective thinking constructs cannot, without qualification, be said to be an object of *knowledge*; but neither is it an object of pure imagination, or of faith that reposes on grounds

warm with emotion but bare of knowledge. Like all other legitimate syntheses, this synthesis of speculative philosophy has its grounds in knowledge; and it has reference, not to mere forms or laws of thinking but to the constitution of the real, to that which is "*trans*-subjective" in the sense of being independent for its own actualization upon the cognitive activity of man. For this reason we have called our discussions a "Theory of Reality." And, indeed, metaphysics, like all serious pursuits of the reflective mind, starts with knowledge. In its analysis of the categories and its interpretation of their meaning as applied to selves and to things, metaphysics *is* knowledge. Thus far pursued, it states its results in somewhat like the following terms: The world of concrete realities, existing under the formal conditions of space and time, is known as some sort of a unity after the analogy of the self. This larger Self, which somehow comprehends myself, body and mind, and all other selves and things, we have ventured to call the "Absolute Self," — with the promise to consider whether there is any necessary impropriety, not to say self-contradiction, in such a compound term. Having, in reliance upon the advanced development of the knowledge of the race, felt the impulse to frame a theory which shall express, upon the basis of this knowledge, the highest ideals of what *really is* in each self, and of what *ought to be realized* in the world at large, philosophy attempts its supreme synthesis. *The inner reality of all beings is Spirit; the system of known selves and things is the "manifestation," in time and space of this Spirit.*

Only ethics, art, and religion, can properly expand, support, and glorify such a conclusion as the foregoing. At the same time, this is a legitimate conclusion of reflective thinking upon a basis furnished by an analysis of undoubted cognitive experience. It remains for the present treatise only to examine this synthesis in comparison with others that are founded upon the same experience.

CHAPTER XVI

MATTER

AMONG the conceptions under which the reflective thinking of man has endeavored to summarize the permanent and universal characteristics of the being and behavior of things, there is one which seems most remote from the conclusions reached by our previous metaphysical discussions. The term answering to this conception is "Matter;" and the speculative synthesis which rests satisfied with this term as affording an acceptable explanatory principle is called "materialism." In the history of philosophy, at least so far as philosophy has been pursued by those who aim at a comprehensive and systematic technique, so-called materialism has commonly been more or less in disrepute. Especially at the present time is it true that few, or none, who cultivate the metaphysics of the schools are willing to espouse and defend the term, however much of its ancient or more modern tenets they may actually credit. Therefore, lively polemics or attacks in front as directed against materialism, are at present destined to be regarded as similar to the thankless task of fighting ghosts or of pulling down men of straw. Nor does the case of the writer who undertakes this task seem improved after it has been shown that the evil remains, though its title be changed; or even that the materialistic way of regarding the world and human life is all the more intellectually seductive and practically mischievous because its advocates will not frankly acknowledge their true allegiance by adopting a time-honored name.

Polemics, however, even if they were at all likely to be grateful and effective with present day students of metaphysical system, would not accord with the most cherished purpose of this book. It is not so much dialectics even as it is a receptive and genial criticism, which we think it right to employ in discussing any "theory of reality" that is a rival of our own. Nor are we inclined to make an exception in the case of that theory which might properly enough be called "*Modern Materialism.*" For the term "Matter" is convenient and even necessary. And the conceptions which the term embodies, though in a somewhat unwarrantably loose and confused manner, are valid for the philosophical as well as for the scientific understanding of reality. Indeed, they are, in part, the very conceptions with which we have been familiarizing ourselves; and for the valid application of which to the real being and actual transactions of all things ("non-selves") we have been contending.

But what is the meaning of the experience which justifies so large and loose a formation as the conception answering to the term Matter? It is no less than that involved in the following line of thought that leads up to a conclusion which one need not hesitate to embrace. Material beings, so-called, considered as they really exist and actually set up the changes whose forms and laws science investigates, cannot be explained at all except upon some theory which admits them to a certain share in the characteristics of an Absolute Self. Nor, when the question is raised: "In precisely what of the characteristics of selfhood do things share?" can the investigator easily discern where the limit is firmly and unmistakably to be set. For, if we are to find in "matter" its own explanatory principle, then surely this principle must include those conceptions that are needed to explain individual things and their transactions, as given in our actual experience with things. But this significant conclusion has been growing clearer from the beginning of the present discussion: The

existence of each thing and the actuality of every transaction between things, is in need of *all* the categories for its complete explanation. But all the categories are interconnected, and yet not identical "moments" of man's selfhood projected into things. The warrant for this procedure lies so deep in the very nature of human knowledge that only in this way is knowledge at all possible for man. Its warrant lies so deep in the very nature of the object of knowledge that only in this way does man know anything about so-called external nature.

If, then, the term "matter" is used at all as an explanatory metaphysical principle, one of two admissions must constantly accompany its use. Either it must be admitted that the term is simply designed to summarize some of the more non-self-like characteristics and doings of things — such, for example, as astronomy, physics, and chemistry make the subjects of investigation; or else it must be admitted that by the term much more is meant than the *merely* popular or the customary scientific use of it would seem to justify. In the one case matter becomes an abstraction for certain definite characteristics only of the Absolute Self, as these characteristics are expressed in things, but without recognizing their essentially self-like character. In the other case, the term would much better be dropped entirely, for its use is likely to be deceptive by way of covering much more than is intended or is clearly apparent. In other words, just so long as the recognized characteristics of all *material* existences are confined to the "crude lumpishness" and mere massive inertia of things, the principle called matter is quite unable to afford a complete explanation of any thing, or of any transaction between things. To give to this principle any life and efficiency, it is necessary to introduce still other "moments" into our grouping of conceptions under this term. And to make the principle adequate to explain the infinite variety of that system of concrete and actual things with which man's cognitive experience presents him,

it is necessary so to enlarge this group of conceptions as to comprise within it all those categories, the essential nature and the significance of which are constituents of our theory of reality. That is to say, "matter" must have become something far different from what is ordinarily understood by *matter*, in order fully to summarize the explanation of any material Thing.

The compound conception indicated by the word "matter" must always be regarded as an abstraction derived from the study of particular things. This is true whether our attention be confined to those meanings which are empirical and scientific in their genesis and character, or whether our criticism be extended to any of its more speculative meanings. As Wundt has well said:[1] "In truth the speculative and the empirico-scientific conception of matter, in spite of the difference of motives that have produced them, form constituents of a single development in so far as, in both cases, the fundamental relation maintained by the knower to his object, is, *in fine*, the same." To show this it is scarcely necessary to repeat the familiar statement that there is in reality no matter in general; in reality, there are only concrete individual things. By using a term, then, which summarizes our experience with these things, it can only be meant to designate that complex conception which includes the characteristics in the possession of which they all agree. But each of their characteristics, in turn (such as "mass," "inertia," "impenetrability," etc.) is itself existent only as a conception derived from observing the behavior, under a great variety of circumstances and in varying relations, of these same concrete individual things. Therefore it is proper to speak of the term "Matter" as resulting from the second degree of abstractness, since it stands for a "*grouping*" of conceptions, a *synthesis* of many thoughts, each of which is derived from many individual acts of our experience with things.

[1] System der Philosophie, p. 447.

It is quite too often forgotten that the valid and defensible conception of matter, whether empirical and scientific or more purely speculative, is a very modern affair. What it is to be a real thing, is a question which the knowledge of man has always prepared him to answer in a practically satisfactory although very fragmentary way. But, What are the accredited characteristics of matter in general? is a question for the answer to which the requisite information has been wanting until comparatively recent times. It is, moreover, a question which, in our judgment, only the physical and natural sciences, are competent to answer or even to essay. Purely speculative answers to such an inquiry, or answers which take their point of starting in the interests of philosophy, are worthless. Only from the observation of what concrete things really are, and of what they actually do, can the problem, What is matter? find its valid solution. We accept, then, the guidance of the physico-chemical sciences in the consideration of this problem; but we reserve here, as everywhere, the rights of criticism and of the metaphysician's point of view. When, then, it is said by a physicist like Sir William Thomson: "We cannot of course give a definition of matter which will satisfy the metaphysician, but the naturalist may be content to know matter as that which can be perceived by the senses, or as that which can be acted upon by, or can exert a force," our response is: "The case is not at all so." The metaphysician is in duty bound to be satisfied with any definition which the naturalist affords, — *if only* this definition satisfies the two principal qualifications of every satisfactory definition. First: it must be comprehensive and internally consistent; but above all it must be, second, based upon undoubted matter of fact.

What the would-be constructor of a system of metaphysics will do with the naturalist's conception of matter, when once it has been made satisfactory to all the naturalists themselves, may be described as follows: He will test the conception to see

if it possesses the characteristics of every satisfactory definition; he will then accept it, and subject it to the process of further reflective thinking with a view to discern its significance for the truth of reality and its place in a systematic and critical Theory of Reality. But, alas! at the present time the former of these tasks is the more difficult of the two. For it is not so much the discontent of metaphysicians with naturalists, as the discontent of naturalists with one another, and with their own knowledge of the subject, which furnishes the chief cause of the difficulties experienced by the expert student of the philosophy of nature.

No one who undertakes to criticise the current conceptions of authorities in physical science can fail to be impressed with their confused and sometimes contradictory character. In spite of this the student of metaphysics must — as has been said — learn primarily from these authorities his answer to the question, "What is this so-called 'Matter,' and what can *It* alone do?" We shall now briefly pursue the quest for satisfaction to this same inquiry. We shall do this remembering that the speculative conception of matter must be based upon the empirical and the scientific conception; and also that every conception, whether that of the naturalist or that of the metaphysician, is only a convenient abstraction designed to summarize certain characteristics of the being and behavior of things. On the one hand, then, the conception of matter in general must cover all that things in general really are, and can actually do; but if, on the other hand, this conception requires at any time to be so expanded as to include characteristics which are not properly ascribable to particular things, then this, its enlarged significance, must be frankly recognized and taken into account by our theory of reality.

The characteristic, or aspect, of material beings that seems most foreign to any conclusion which affirms the ultimate spiritual nature of so-called matter is, of course, their "mass"

— with the related qualities of extension in three dimensions, of solidity, inertia, weight, momentum, etc. *Mass* is the one essential and unalterable characteristic of matter; and its expansion or contraction in volume, its increase or diminution of solidity, the overcoming or the persistence of its inertia, the changing weight of bodies as dependent upon their relations in space, and the alterations in momentum that are connected with changes in velocity — all these do not affect, but rather assume the continuity and unalterableness of mass. Let a given body be compressed so as to reach its utmost limit of density or be dissipated through immeasurable space; let it be rendered motionless or shot onward with inconceivable rapidity; let it become a member of a complicated system of bodies or be isolated so as, *ex hypothesi*, to stand alone in the universe, and through all these changes its mass remains unchanged. As formally constituted any particular material body can be put out of existence; the characteristics of its energizing may be profoundly changed; it may be rendered quite unrecognizable by the senses which were once familiar with it; or it may be made impossible of recognition by any of the senses. But its mass cannot be annihilated or diminished. Mass is the permanent and essential characteristic of all matter; or — to reverse the statement without changing its meaning: All Matter *has* mass. Such is the firm conviction of modern physics, however contrary to the immediate evidence of the senses such a conviction may seem to be.

And what is true of each material body is true of that entire collection of such bodies which science recognizes as constituting the material universe. The mass of the matter in this universe is assumed itself to remain, amidst all changes in the bodies over which it is distributed, forever unchanged.

Now "that which" has for its most fundamental and unalterable characteristic the possession of mere sameness of quantity, and which makes its being in reality known by persistently "bulking" the same, seems most unspiritual and

impersonal, no doubt. For was it not matter, thus considered, which Newton spoke of as "brute and inanimate?" But all matter is necessarily thus to be considered, with whatever other changing characteristics it may seem to be endowed. How, then, can its "*self-like*" character be maintained? How can matter, in general, be regarded as a manifestation, creation, or revelation, or as an emanation, aspect, or phase, of an Absolute Self?

The particular choice of words to indicate the permanent and essential *relations* between Matter and the Absolute Self does not concern us at this point. But the essentially self-like character of matter, even as treated by the physics of "mass," is apparent when we think ourselves through, along these two lines of reflection: first, so as to determine what is meant in reality by ascribing mass, and its allied characteristics, to all matter; and second, so as to estimate how much (or rather, how little, how absolutely nothing), of our experience with material things can be accounted for in terms of *mere* mass.

The experience with things in which originates the physicist's right to regard matter as having the permanent characteristic of mass is not difficult to describe or to understand. Things affect his sense-consciousness; and in his perceptive experience they appear as changing their spatial qualities and spatial relations, in a way that can be directly measured, or indirectly estimated, quantitatively. Now the *mass* of matter is the quantity, or amount, of the "that-which" whose name is "matter." To say that all matter always has mass is the same thing as to say that the being of all material things can always be known, or imagined, as "so much" of a universal substrate. What is thus quantitatively measured or estimated by the physicist is always — primarily considered — the intensity, or the extensity of his own sensuous experience. And what measures, or estimates, is the physicist's intellect. When, then, it is affirmed that all

"matter has mass," it is stated, on the basis of a cognitive experience with all particular things, that quantity and number are not merely the physicist's subjective experiences of sense and intellect but are also categories which belong to things in reality. But what it is to have a being that is measurable and numerable, and what it is actually to possess the categories of quantity and of number, has already been made clear. The importance, the necessity even, of giving an interpretation in terms of selfhood, to these categories — not the less when they are applied to material things — has been sufficiently emphasized. All matter has — nay, *It essentially is* — measurable quantity. Quite contrary, then, to the prevalent impression, if we make serious work of applying these conceptions to the *extra*-mentally real, we do but assert its permanent and unchanging possession of certain fundamental self-like characteristics.

Nor is the cogency of the conclusion diminished but rather enhanced by accepting those extensions of it upon which the modern science of physics particularly insists. In affirming that the mass of the matter of the universe is known, or assumed, to be unchangeable, the physicist pronounces no valid conclusion as to the finiteness, or infinity, of the World-Ground. He only states his conviction that, so far as man's experience with the system of material things goes, this assumption of its unchanging quantity, is the best in accordance with that experience. That is to say, as the data of experience accumulates, science is better able to affirm that, if any relatively large amounts of matter were being added to, or subtracted from the known physical universe, we should probably be able in time to detect the gain or the loss. But that the Absolute Self is not slowly increasing or diminishing this quantitative sum-total of his immanent manifestation — much less that He never will, or that He cannot — physical science has no power to pronounce! Nor does the physicist make any pretence here to be dealing with the

metaphysically Infinite. For, as Riehl,[1] following the lead of Dühring,[2] has said: "An unchangeable quantity is finite. So, because matter and force are unchangeable in quantity, they must be finite in quantity; for the infinite is no quantity, and the indefinite is no unchangeable quantity. The matter is determined by its mass; therefore, the total sum of mass in the universe is a finite quantity, or in other words the world is finite as to mass." But to all these statements of Riehl must be added the qualification — *so far as known to our sense-experience and capable of being treated by the empirical science of physics.*

Neither does the physical conception of the unchangeable character of the world's mass of matter affect either the character or the validity of our conceptions of space, time, and causation. And if under the phrase, "the world as a whole," it is meant to include the existence and development of finite selves, the historical evolution of selves and of things in their mutual relations, and the all-inclusive Reality of the World-Ground, then the following declarations of the author just quoted are undoubtedly also true: "The quantity of mass, and the extent of it in space, *plus* the sum of all processes in time, does not exhaust the quantity of the world as a whole; this whole does not come under a concept which is abstracted from the effect of things on conscious beings." This view of the problem of mass, as physics considers it, enforces rather than contradicts the following important conclusion: Matter, considered as having *mere* mass, is as yet not an effective, explanatory principle of things; it is not matter at all in any meaning of the term which will enable us to understand the existence and behavior of the totality of particular things.

Before, however, we pass to the further consideration of this truth it may be noticed in passing, that this steady-going,

[1] Riehl, "Der Philosophische Kriticismus," II. ii. p. 302 f.

[2] Neue Grundmittel und Erfindungen zur Analysis, p. 88 f.

and relatively unchangeable character of matter, as respects its mass, is a shrewd device on its part to lay in strong foundations the building of an intelligible Cosmos. It would be very inconvenient, to say the least, if the "that-which" whose amounts of being and action we call the mass of matter, were not accustomed to maintain a reliable *status* toward us, in so fundamental relations as these.

Modern physics is, in general, agreed further to define "matter" as that being which we know by sense-perception and which comes under the laws of physical dynamics. In this it accords fairly well with such a metaphysical definition as the following:[1] "Matter is that conception of the Real, as substrate of the objective representation of time, which is deduced from the spatial sensations of pressure and resistance, of mobility and extension." A definition which may be declared to afford a relative contentment to the naturalist has been summarized in the following sentence: "Matter is that which can be perceived by the senses, or that which can be acted upon by or can exert force" (Thomson and Tait).

It is unnecessary to analyze and discuss in detail the conception of matter which corresponds to the sentences quoted above. It should be noticed, however, that the conception comprises — or rather represents as an alternative — two sets of characteristics which do not rest upon precisely the same grounds. These are, first, those characteristics of material things which can be intuitively discerned by sense-perception; and, second, a primary ability of material things to play a part, so to speak, in a system of interacting agencies whose existence and laws make, for their discovery and understanding, higher demands upon the observer's thought. But both these sets of characteristics are referred by the very language of the physicist's definition to a common substrate, or ground. This substrate, or ground, is hinted at by a device which we had occasion to subject to critical examination in an earlier

[1] Riehl, "Der Philosophische Kriticismus," II. i. p. 275.

part of our work (see p. 116 f.). It is dumbly indicated and mentioned with an air of mysterious agnosticism as though it were too remote from or too high above, ordinary experience to receive a definite name. It is called a "that-which." Matter is "that-which" can be perceived, etc.; or "that-which" can be acted upon, etc. But the alternative indicated by the word "or" which is introduced into the definition certainly does not mean that one may take one's choice between these as two mutually exclusive forms of conceiving of matter; for both of the following more particular characterizations must be held as necessary attributes of this, their common substrate. Matter is then, by the naturalists of a contented mind, regarded *both* as that real being which becomes known to every percipient through the senses, *and also* as that real being which is known to physical science as the subject of acting and reacting forces. On the one hand, however, the scientific conception rests upon sense-perception as its base; and, on the other hand, every plain man knows also something about things as capable of being acted upon by, or as exerting, force.

Now it is at once apparent to the critical student of metaphysics that even this *minimum*, sun-clear conception of matter, becomes, when you open it, a perfect Pandora's box for the escape of those same categories which have already given us so much trouble. To speak of a "that-which" as the subject of qualities, as the terminal point of issuing and entering forces, as the being that can make every man perceive it when he uses his senses, is, if we insist upon thoroughness in reflective thinking, only to introduce the same obscure ontological problem which metaphysics has long striven with under the concept of "substantiality." Then, too, the physicist's definition insists upon the truth of experience that matter is *known* as somehow the "cause" of changes in our perceptive consciousness; moreover, the different portions of matter must be regarded as *interconnected* in their modes of behavior,

because they "exert force" — of course, upon one another as parts of a common material system. This aspect of this definition at once introduces us to the conception of regular ways of "being acted upon by," and of "exerting" force; but these regular ways are nothing less than the "laws" of the physical universe, or of matter. The most ideal of the categories — such as finality — is now not far ahead, and lying right across our path.

At this point, however, certain vacillations and confusions of current physical conceptions need to be made the subject of remark. For some physicists have been accustomed to speak as though matter *could* exist apart from energy; and, on the other hand, as though energy were a sort of additional entity which *could* operate "upon" matter from without, or *could* be distributed "among" different portions of matter in an external fashion. "Matter *and* energy" are thus treated as a pair of entities whose co-operation is necessary in order to explain the being and the transactions of things. Matter and energy are twins; even though they are like the Siamese twins, bound together inseparably at their vital parts. On the contrary, the modern dynamic and evolutionary view of the world, in connection with an idealistic metaphysics, has recently progressed so far as to lead some physicists to make the attempt to state the reality of matter in terms of space and of energy only. But still others seem inclined to regard Matter as the wholly unknown Substrate which — being existent *per se*, as it were — is revealed to man by being the vehicle and seat of varying amounts of energy. Thus is energy conceived of as an entity that is somehow not essential to the very being, to the substantiality, of matter, but is rather regarded as the revealer of the character and state, for the present time, of some particular portion of matter. It is difficult to see how, otherwise, one is to interpret the following passage from Clerk Maxwell:[1] "All that we know about matter

[1] Matter and Motion, p. 163 f.

relates to the series of phenomena in which energy is transferred from one portion of matter to another, till in some part of the series our bodies are affected, and we become conscious of sensation.

"By the mental process which is founded on such sensations we come to learn the conditions of these sensations, and to trace them to objects which are not part of ourselves, but in every case the fact that we learn is the mutual action between bodies. . . . Under various aspects it is called Force, Action and Reaction, and Stress, and the evidence of it is the change of the motion of the bodies between which it acts.

"Hence, as we have said, we are acquainted with matter only as that which may have energy communicated to it from other matter, and which may, in its turn, communicate energy to other matter."

The current physical conception of matter becomes further oppressed with internal difficulties or contradictions when we consider that, according to accepted tenets of physics, *inertia* is a primary and universal characteristic of matter. This characteristic, *as commonly defined*, seems difficult of reconciliation with the characteristic possession of that energy which, being received or being parted with, physics regards as also essential to the very nature of matter. For we are told that by inertia is meant "the essential incapacity of matter of altering the state into which it is put by an external cause, whether that state be rest or motion."[1] By combining conceptions of inertia and mass, we reach the conclusion that inertia is the "quantity (or mass) of matter considered as resisting the communication of motion." Yet again, on expressing this characteristic of inertia in terms that are better suited to the atomic theory of the constitution of matter, it may be affirmed that "the incapacity of all material points to

[1] See Whewell's "Mechanics" (7 ed.), where it is declared (p. 9) that "matter is originally apprehended by its resistance to the action of force."

put themselves in movement, or to change the movement which has been communicated to them, without the aid of a force, is what is understood by the inertia of matter."[1] Upon Descartes' notion of the primary property of matter as announced in his "First Law of Nature," — namely, that every individual thing *so far as in it lies*, perseveres in the same state, whether of motion or of rest," — Clerk Maxwell[2] observes: "In the words, 'so far as in it lies,' properly understood, is to be found the true primary definition of matter, and the true measure of quantity." This need of material bodies to have the cause of their changes in space lie outside of themselves, this self-incapacity (*quantum in se est*) to move when at rest, or to come to rest when moving, is emphasized in Maxwell's own declaration that we "are acquainted with matter only as that which may have energy communicated to it," etc.[3]

The foregoing and other similar attempts to combine the physical conceptions of inertia and of energy in the same substrate, Matter, are, in expression if not in thought, unsatisfactory and even contradictory. The same reality cannot be both the source of energy as thus defined and also the victim of inertia, at the same time. If by the term "matter" modern physics means to designate the entire system of physical things, considered as operative and yet irrespective of its genesis and its relation to absolute mind, nothing can be further from its own accepted principles than to speak of any portion of matter as wholly dependent for any of its changes (from motion to decreased motion and rest, or from rest to motion) upon forces external to itself. Physics necessarily assumes the sum-total of matter as already in motion, and as fully equipped with the completed quantity, and with all the kinds of forces necessary to do its ceaseless work. If,

[1] Compare M. Poisson, "Traité de Mécanique," II., p. 208 f.
[2] Matter and Motion, p. 26 f.
[3] Ibid., p. 164 f.

however, we mean to consider any actual portion of matter, any material thing, no matter how "brute and inanimate" it seems, such portion of matter can never properly be said to be dependent for its changes of position, its acceleration or decrease of motion, or its internal molecular alterations, wholly upon forces communicated to it from without. Indeed, if every material being were thus burdened with inertia, whence could any of the forces that produce the actual changes of things be derived? A collection of wholly inert bodies, or of bodies that — so to speak — had no principles of change within themselves, could never constitute, much less build up, a world like that in which we find ourselves existing. This actual world of experience, with which physics as an empirical science deals, contains no beings that are completely at rest; neither does it show us beings that are moving in mass, or are undergoing internal changes, with a perfectly uniform velocity. Such a world lies only in the theoretical dream-land of "*pure*" physics.

And, finally on this point, it is scarcely necessary to remind ourselves again that all the language of scientific physics about the "communication" of forces from one body to another, and about the "transmission," or the "distribution," or the "conservation and correlation" of energy, is highly figurative. Force, we have decided, is not an entity that can be separated from actual things and made to rule over or dwell within them. (Compare chap. X.)

However unfortunately he may at times express himself, the thoughtful physicist is not unacquainted with the truths which have just been restated by us. One of the authors already quoted (M. Poisson), in defining the inertia of matter, says: "The word does not signify that matter is incapable of action; on the contrary every material point (*sic*) at all times finds the principle of its movement in the action of other points, but never in itself." Now, in the unqualified way in which this statement is left standing by its author, it is

untrue, and even absurd. It can be made, however, to express important truths if it is qualified so as to read, "every material body always finds the principle of its movement (or, rather, change in the rate of movement), *in part*, in the action of other bodies and never in itself *alone*." Another writer on physics (Clerk Maxwell) comes nearer than is customary with himself or with others to a fortunate statement of the complete truth, in the following sentences: Force is "but one aspect of that mutual action between two bodies which is called by Newton Action and Reaction, and which is now more briefly expressed by the single word 'Stress';" and again: "If we confine our attention to one of the portions of matter, we see, as it were, only one side of the transaction, viz., that which affects the portion of matter under our consideration; and we call this aspect of the phenomenon, with reference to its effect, an External Force acting on that portion of matter, and with reference to its cause we call it the Action of the other portion of matter." [1]

Let now our reflective thinking return to the actual facts of man's cognitive experience with things as real and concrete. For physicists, as truly if not as unprofitably as metaphysicians, are liable to be too much captivated by mere abstractions, and by the prospect of rendering their science "pure" and no longer subject to its proper empirical limitations. These things, which man's daily use of his senses — not without thought and instinctive metaphysics contributing to his cognition — makes known to him, are manifold, highly differentiated qualitatively, ceaselessly active in changes, whether regarded as masses of matter or as constituted of separable molecules and atoms. They all appear in existence, either as bearing more or less specialized forms, or else as rapidly undergoing evolution by processes which the chemico-physical sciences can only imperfectly describe and can scarcely at all explain. Even the most "brute and inanimate" portions of

[1] See "Matter and Motion," p. 53 f.

matter have their specific series or round of changes defined for them under the influence of complicated causes, which we, in our ignorance, consider as belonging to the "nature" of things. Not one "Thing" among them all that is not self-active after its own nature, or kind; not one of them that is not also dependent on many — we may even suspect, upon all — of the others, for the character of both its actions and its reactions. And this present, vast and incomprehensible complexity of habits, both of suffering from inertia and of showing the possession of energy, cannot be reduced to any such simplicity of elementary beings and conditions as does not virtually contain within itself the principles necessary to explain the very present complexity from which all efforts to explain start out.

From this present point of view, then, we seem compelled to agree with Du Bois-Reymond in his declaration that "separately" force and matter do not exist; or, in the words of another writer (Cotta): "Nothing in the world justifies us in assuming the existence *per se* of forces, independent of the bodies from which they proceed and upon which they act." Further critical examination shows, however, that both these expressions are framed so as virtually to take back the very truth they are designed to assert. If forces can, in reality, "proceed from" one body and "act upon" another, then forces must be conceived of as somehow existent *per se*. And strictly speaking, to frame any physical theory in terms of force *and* matter, is to assume that the two terms employed represent entities which may at least be conceived of as existing "separately." Nor can this difficulty be escaped, or our statement as to the precise terms on which things actually exist and operate be improved, by slurring over the *reality* of those experiences which lead the mind irresistibly to the employment of both conceptions — namely, Matter *and* Force. For instance, we can neither resolve force into a new relation, into "any circumstance that determines motion," nor can we consider matter as existent, or efficient, if it be not *per se* pos-

sessed of, and in the actual exercise of, what physics is pleased to call energy or force.

The language of philosophy, although by no means always sufficient to lead us at once into clear sunlight for these physical conceptions, is in general better adapted to tell that truth which physics means to express. Of one important aspect of this truth, the statement of Lotze,[1] although not altogether fortunate, is suggestive: "Forces" (as taken with the laws, which are said to govern, or express the formulas of the forces) "are conditions which enable one thing to effect another and to place itself to that other in different relations." So Professor Watson:[2] "The true definition of Force is to be found in the infinite *relations* between material things which constitute the world as *real*." Or, to quote Mr. Spencer's more elaborate conception: "Force, as we know it, can be regarded only as a certain conditioned effect of the unconditioned cause, as the relative reality indicating to us an absolute reality by which it is immediately produced." More compact, nervy, and direct is the expression of Mr. Lewes:[3] "Force is the dynamic aspect of existence, the correlate of Matter." And Professor Bain[4] goes so far as to assert that matter, force, and inertia, are the three names for substantially the same fact . . . force and matter not two things, but one thing. "Force, inertia, momentum, matter, are all one fact."[5]

If now the facts and truths which are either recognized or implied by such scientific and philosophical tenets as the foregoing are examined in the light of our experience with things, we are forced to this metaphysical conclusion: *The being of the world of many things has a certain unity of Substrate or Ground; and this Substrate or Ground is permanent amid all the changes of particular things.* While they change in mani-

[1] See his "Metaphysik," II. v. for a discussion of this conception.
[2] Journal of Speculative Philosophy, XII. p. 137.
[3] Problems of Life and Mind, II., pp. 229 ff.
[4] Logic, vol. II., p. 225 f.
[5] Ibid., II., p. 389.

fold ways, IT (the so-called "Matter" out of which these things are composed) changes not — so far as its essential characteristics are concerned. Among the essential characteristics of matter, most permanent and universal are those which, in abstract terms, are defined by physics as mass, and inertia, and action and interaction caused by force. Thus is recognized the capacity of each portion of matter for resistance to unlimited or lawless change; as well as its ability, in accordance with a variety of principles which admit of more particular determination by experience alone, to put forth of itself, and to induce in other portions of matter, certain limited and "principled" changes. This permanent and universal Being of Things, for which, when considered as the subtrate of all particular physical existences, the abstract term "matter" is employed, *will* not change unless it has *good reason* therefor. It asserts its persistence as so-called "inertia." But then, on the other hand, IT is always and everywhere actually in a process of change; and this ceaseless change is because, taken as a whole, "matter" is an enormous and seemingly exhaustless store of energy, which is — so to speak — constantly being distributed and redistributed among the infinite number of particular things.

If, then, we are to use the term matter as an abstraction which shall conveniently summarize all those permanent and universal characteristics which man's experience recognizes as belonging to so-called material things, we must recognize this use as covering far more than the term covers in that use of it to which physics is committed. Matter, regarded as a Subtrate having its essence merely as a measurable quantity, — "brute and inanimate" but bulking so much, — cannot be the stuff out of which actual, concrete, and infinitely variable things are made. In order to constitute the reality of all things, Matter must not only be acted upon by, and exert force (or rather a great variety of forces under an infinity of changing conditions), but it must also, of itself, possess these

forces; it must be, *per se*, Force. But this is, as the analysis and application to reality of the conception of force has already shown us, to be a *Will*. Every will, as each man knows it in his own case and in the cases of other selves, is a self-active being that acts, however, only as conditioned by the relations which it sustains to other beings, and yet toward the end of realizing its own ideas. Such, too, is virtually the complex conception which we apply in the effort to understand, as fully as possible, the real being and the actual doings of every particular Thing. No portion of matter can be *a* material thing, however much we may depreciate or affect to despise its materiality, without having so much of a share in the World's ideal existence and ideal aims as is implied in all this.

We repeat our view of the problem of material Reality — of what is called Matter — as seen from the philosophical point of standing. That which physics designates as a totality, or rather as a genuine and effective unity including all material things, cannot be poorer and meaner than the constitution of the poorest and meanest being which it is meant to include. By "matter," considered as the possessor and user of all the force that distributes and differentiates itself according to the appropriate relations in an infinity of ideal ways, and that thus attains a marvellous variety of ideal ends, which somehow, in spite of their variety, combine into the Unity of a physical Cosmos — by this substance thus described and defined, we cannot possibly understand mere mass of dead, unideating, "stuff," moved from without by forces external to itself. But what must be covered, either by this or by some other equivalent term? What less can be understood by any such term than the summing-up, in a vital and effective way, of all those categories that characterize the system of so-called material, or physical things? But these are the categories which have been shown to define our conception of an Absolute Self.

Physics, then, is quite at liberty, in the effort for a better handling of its complex and intricate phenomena, to isolate certain aspects of things; and even to treat the abstractions thus secured as though they, of themselves, stood for something that exists alone, and acts effectively in the world of reality. But when physics substitutes any of these abstractions for the total living Reality, or when it combines all its favorite abstractions into some single conception and makes use of the result to dispense with the recognition of the deeper meaning of yet more fundamental principles, it steps quite out of its safe and proper path.

Suppose, then, that the student of nature, "abandoning all disguise" and "prolonging the vision backward across the boundary of experimental evidence," discerns in "that matter which we, in our ignorance and notwithstanding our professed reverence for its creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of life;" several methods are open to the dissenting philosopher. Among them perhaps there is none better than that of responding: "Whom therefore ye ignorantly worship, him declare I unto you." For this declaration of the physicist is capable of being understood as amounting in substance to the avowal of the philosopher Schelling:[1] "Matter is the general seed-corn of the universe, wherein everything is involved that is brought forth in subsequent evolutions." And have we not the same physicist's[2] word for it: "If life and thought be the very flower of matter and force, any definition which omits life and thought must be inadequate, if not untrue"? But to recognize the essential qualifications of selfhood as belonging to the principle to which the existence and the potency of all things, even of living things, is referred, and then to ascribe its effects to an abstraction which has been already denuded of the most essential, persistent, and illumining of

[1] Ideen zu einer Philosophie der Natur, p. 315.

[2] See Tyndall's "Fragments of Science": "Musings on the Matterhorn."

these qualifications, is to play fast and loose with language, and with the processes of thinking which make language intelligible. Of course, that can be got out of any group of conceptions which you begin by putting into the same group. But if the particular group which your theory means to have do the work of explaining the being and transactions of all material things is to accomplish its heavy task, It must possess all the essential characteristics of these things, considered in their genesis, their mutual relations within the unity of an ideal system, and their development. And this is to possess the essential characteristics of an Absolute Self.[1]

That the conception which physical science includes under the word matter, even when it involves such a wide grouping of effective characteristics as has already been discussed, does not suffice to account for the constitution, the behavior, and the development of material things, is confessed by the very terms of the current atomic theory. The known world of material things is much too varied and changeable in its forms to be understood without resort to further principles of differentiation. How to account for its infinite variety in terms of unifying conceptions — this is the problem for science and philosophy alike. Space, Time, and Causation, when employed as abstractions by philosophy will not accomplish this task. But neither will Mass, Energy, Action and Reaction, and other similar abstractions of physics. The real world, try as we may to overlook or confuse the fact, is based upon an infinity of distinctions. If matter is the one womb from which all material things proceed, still the particular character, the individual preferences and startlingly unique performances of her children are no less observable. Hence the need of some attempt to lay the foundations of our theory of reality in a larger variety of qualitatively different

[1] This curious sentence from Bacon is illustrative of the truth we are enforcing: "Atque asserenda materia (qualiscumque en est) ita ornata et apparata et formata, ut omnis virtus, essentia, actus atque motus naturalis ejus consecutio et emanatio esse possit."

principles than those which the so-called "pure science" of physics affords.

It is not necessary for the student of metaphysics to attempt in detail to expound the nature, or to trace the history, of modern chemistry. Neither is the student of metaphysics called upon to arbitrate any strife which may arise between chemistry and physics over the question as to which of the two is destined ultimately to absorb the other. Fortunately, too, the chemists themselves may safely be left to investigate further the nature and the relations of those hypothetical entities to whose existence and potencies their science refers the constitution and the behavior of all material things. Only, where there is confusion now philosophy may ask for clearness — to be obtained within reasonable time. And where fundamental metaphysical conceptions are at stake, philosophy must assume the part of critic, and even of guide and arbiter, for the students of both these positive sciences.

Upon any hypothesis which renders the atomic theory *purely* dynamical and mathematical, and which regards the atom as *merely* the unextended centre of forces of attraction and repulsion, metaphysics has something decisive to say. This view, as held by Faraday and stated by Tyndall,[1] endeavors to substitute the abstract conception of the infinite divisibility of space for those elemental realities which result from the exceedingly minute but actual subdivisions of material things. And it bases this attempt upon assumed inability of the imagination, — as is shown by the following series of questions: "What do we know of the atom apart from its force? You imagine a nucleus which may be called a, and surround it by forces which may be called m; to my mind the a, or nucleus, vanishes and the substance consists of the powers of m. And indeed what notion can we form of the nucleus independent of its powers? What thought remains on which to hang

[1] See "Faraday as a Discoverer," Am. ed. p. 123.

the imagination of an *a* independent of the acknowledged forces?" Now, all this is one of the most facile and cheap, as well as most fallacious, forms of the *argumentum ab difficultate imaginationis*. It may itself be employed with most destructive effect against any attempt to substitute *mere* centres of force for exceedingly small subdivisions of material substance. To the questions just quoted one may respond with questions which throw equal doubt upon the reality of the forces that "surround" the atom. How is imagination to depict these forces as independent entities that pull and push from their purely fictitious and unreal seats at calculable points in space. But when both nucleus *a* and surrounding forces *m* have vanished because they are equally inconceivable by the imagination, what remains of the atom *x*? Its problem is, indeed, solved for it; but the solution is the total dissolution of all the atom's claim to a place in reality. In a word, *x* has lost itself by losing both its *a* and its *m*.

What is the value to our cognitive experience, and what is allowed and confirmed by a critical metaphysics, when we speak of the atom as a constituent of material things has already been made sufficiently clear. For the atom, or element of all material things, its "substantiality" and its "energy," guided by ideal considerations to ideal ends, mean precisely as much as, and no more than, is meant by applying the same metaphysical conceptions to those material things which are said to be composed of atoms. Really to be, and to be a centre of forces, is no more or less difficult or mysterious for little beings than for big beings. Size has nothing whatever to do with the understanding or the validating of these categories.

If, then, the science of chemistry wishes to maintain the atomic theory in the presence of a critical metaphysics, it must regard its atoms in somewhat the following way. "Atoms" are those hypothetical elements of material things which it seems fitting, and which it may become necessary to

assume as originally endowed with all those characteristics that are found indispensable to an explanation of our matter-of-fact experience with such things. In its own language its theory is of the following order: "Atoms are not material points; they possess a sensible" (better, an appreciable) "dimension and doubtless a fixed form; they differ in their relative weights and in the motions with which they are animated. They are indivisible and indestructible by physical and chemical forces, for which they act in some manner as points of application. The diversity of matter results from primordial differences, perpetually existing in the very essence of these atoms and in the qualities which are the manifestation of them.

"Atoms attract each other, and this atomic attraction is affinity. It is doubtless a form of universal attraction, but the former differs from the latter in that it is not obedient to the influence of mass; it depends on the quality of the atoms. Affinity is elective, as has been said for a hundred years."[1]

Further discussions as to the physical qualities and the possible internal constitution of the different species of atoms do not essentially change their metaphysical value or their application to the explanation of human experience with material things. Among such discussions are those, for example, over the following questions: Are the atoms to be conceived of as hard, perfectly incompressible and inelastic bodies, with a quite rigid shape (not necessarily a "fixed form"); or are they elastic, of quasi-fluid structure, and capable of assuming a variety of shapes, and of rapidly changing their internal constitution? Now, nothing can be more "plump" than the contradictions in the statements of different authorities on some of these points. According to one writer,[2] "the concept 'elastic atom' is a contradiction in

[1] From Wurtz, "The Atomic Theory," p. 308.

[2] Prof. Wittwer, in "Schlömilch's Zeitschrift für Math. und Phys." vol. xv. p. 11

terms, because elasticity always presupposes other parts the distances between which can be increased or diminished." "But, on the contrary," says Sir Wm. Thomson, "we are forbidden by the modern theory of the conservation of energy to assume inelasticity of the ultimate molecules, whether of ultra-mundane or mundane matter."[1] Thus atoms are really to be conceived of as "the rotating parts of an inert, perfect fluid, which fills all space, but which is, when not rotating, absolutely unperceived by our senses." "A vortex filament, in a perfect fluid, is a true 'atom,' but it is not hard like those of Lucretius; it cannot be cut, because it necessarily wriggles out from under the knife."[2]

Such a conflict between the geometrical and the dynamical forms of the atomic theory can, as Wundt has declared, be settled only by extending the limits of our experience. Nor is it unlikely that it never can be settled at all. "God only knows," what the true nature of the atom really is; and perhaps He knows that it is, even in its most elaborate modern form, a lame and inadequate attempt to solve the great problem of our experience with a World which has in it such an infinite variety of differently qualified and yet mutually interacting and rationally connected things; and which, therefore, we somehow feel ourselves compelled to consider as, after all, only *One*.

We must, however, at this point protest in the interests of intellectual honesty and of the principle of *sufficient* reason, against all attempts to break down the testimony of qualitative chemistry; — against that merely physical atomism, which claims to derive the qualitative properties of matter solely from the forms of atomic motion. Should this attempt succeed, it would not simplify our cognitions, or our theory of reality, in the least. An irreducible variety in the modes

[1] Comp. a concluding Article by A. Fresnel, on the law of elasticity as applied to the ultimate particles of the ether, Poggendorff's Annal., vol. xcix. p. 494 ff.

[2] G. P. Tait, "Properties of Matter," pp. 13, 19 f. Comp. Wurtz, "The Atomic Theory," p. 327 f.

of the motion of an atom, that is of one kind so far as its physical characteristics are concerned, would be no easier to comprehend as an explanatory principle, than is a large original variety in the kinds of atoms. Indefinite variety in the so-called "natures" and the performances of things, and a sort of unity to the one "Nature" which they combine to constitute, are both facts of our cognitive experience. And if we combine into one grouping of our conceptions the characteristics which are sufficient to account for both such facts, we have the same indescribable wealth to the content of the result, whether it be called a physical or a chemical hypothesis of matter.

Considerations like those just discussed have led a recent writer[1] to maintain, "Not only do the atoms seem instinct with a desire for life, and the inorganic ever show a tendency to run into the organic, but each atom *is* a life; and life in its rudiment is a property of all matter." But the same writer goes on to say: "The life principle, varying only in degree, is omnipresent. There is but one indivisible and absolute Omniscience and Intelligence, and this thrills through every atom of the whole Cosmos. . . . This may be called the poet's view, but it is forced upon us as the highest generalization of modern science." Such utterances, however, whether they come from the poet or from the man of science, have plainly raised the ordinary conception of physics and chemistry to a far higher sphere of application. We shall therefore return to this conception again under the terms Nature and Spirit.

The properties of so-called matter, whether conceived of in physical terms such as "mass," "energy," "inertia," "action and reaction," etc., or in chemical terms that describe some seventy different kinds of elements, and an indefinite variety of their combinations and separations under

[1] Quoted from an article on "The Joys and Sorrows of the Atom," by Dr. G. E. Bailey. The Humanitarian, London, Oct. 1898.

laws of elective affinity, are becoming more mysterious and amazing as man's study of individual things becomes more minute and more profound. Modern science has rendered nature, not less but far more mysterious and incomprehensible from the merely physico-chemical point of view. It is not my mind, with its sensation, feeling, thinking, willing, that is for itself most fundamentally mysterious. It is not psychology which is chiefly breaking down with its ancient conceptions and its alleged explanations. It is what we are pleased to call "matter" that constitutes the all-engulfing mystery. It is physics and chemistry and biology which are put to the stretch to make their *understandings* keep pace with their observations and their discoveries of facts.

Indeed, it is no longer possible to maintain that the physico-chemical conception of matter — in the old-fashioned form of this conception — will begin to cover man's enlarging experiences with the system of non-selves, with the world of things. Old-fashioned matter, even when dressed out with newly discovered physical and chemical clothing, is no longer an all-sufficient entity. A new claimant for our astonished devotion has already appeared. An entity called "ether" must also be invoked by the pious devotee of the realism of the modern physical and chemical sciences. And how intoxicating to the brain of the enthusiastic worshipper is this new entity!

Although the conception of "ordinary matter," formerly regarded as "brute and inanimate," has been enriched and enlivened so as to make it unrecognizable, there still seems need of other properties and potencies to be ascribed to the universal Substrate. *Things* — that is to say — are so numerous, so variable, so seemingly capricious, so profoundly mysterious in their origins, qualities, and ways of behavior and of development, that "matter" and "ether" must form a joint stock partnership to own them all. In general the more simple the constitution of your universal substrate becomes,

the more complicated become the explanations, whose entire weight must be thrown upon the forces, motions, and laws of this substrate. But even the boundless imagination demanded by the discoveries of modern chemistry and modern molecular physics does not appear to suffice, if it be allowed only one subject, or permanent and unchanging base. Ether is introduced as a new Being of things, because matter cannot endure such strain. A single proprietor will no longer do; a syndicate of Matter, Force, and Ether must control the "output" of the World.

Now, we have already said that the most fundamental and unchangeable characteristic of "ordinary" matter is its mass. But, perhaps, ether has no appreciable mass, or even no mass at all. Is it then no matter? or, is ether a new, strange kind of matter which has somehow managed to dispense with the most important characteristic of its companion substrate of all physical phenomena? Shall we then call it entity, or energy, or spirit, — if it be not matter? How does ether manage to unite in itself such wonderful, contrary characteristics as an almost, if not quite imponderable tenuity and an enormous elasticity? How does ether manage to correlate itself so completely with matter as to preserve the principle of the conservation of energy between the moving masses or molecules of matter and the ethereal energy of light, electricity, and magnetism? Is its constitution that of a fluid continuum; or is ether, too, composed of atoms? If its atomic structure be denied, we may go on to ask, in the name of Professor Tyndall, whether the "imagination will accept a vibrating multiple proportion — a numerical ratio in a state of oscillation." To this question we may give, or not, his answer: "The scientific imagination demands as the origin and cause of a series of ether waves a particle of vibrating matter quite as definite, though it may be excessively minute, as that which gives origin to a musical sound."[1]

[1] See "Fragments of Science" (Am. ed.), p. 431.

Small wonder, if its most intimate friends should now feel obliged to address it in terms similar to those in which Faust spoke of that Unknowable One whom men ignorantly worship as God.

"Who dares express him?

. . . . .

The All-enfolder,
The All-upholder,
Enfolds, upholds He not
Thee, me, Himself?"

With the scientific answers which will be given to these questions by the improved physico-chemical theory of the world, metaphysics is, of course, interested, but not at all vitally concerned. It can only discover under the term "ether," a repetition and new grouping of the same conceptions as those with which the discussion of the categories has already made us familiar. Matter and ether, or ethereal matter, or material ether, it matters not which. The Ground of the World of things with which man's growing cognitive experience makes him familiar must include all the necessary principles of change, differentiation, and development, as well as of that persistency in bulk and in energy on which scientific physics is wont to build. If science continues to use the term matter to group together all these conceptions, it must at the worst be intelligently honest in recognizing what it has done. *It has thus only made the Substrate of material things more and more completely Self-like.* It has thus only equipped this common substrate with more and more of spiritual properties. It has thus only indulged to greater lengths, and in higher regions, although in the name of science, the mind's necessary tendency, or rather, its instinctive and inevitable necessity to be "anthropomorphic." And finally, we may end by deifying Matter. In this way the intellectual processes pursued and the end attained are largely similar; the practical and emotional effects may be

almost identical; but the word which marks the final stadium is certainly not so appropriate, or so rational, as the old-fashioned word, God.

An enthusiastic advocate[1] of the all-sufficient reality of that complex abstraction which has been discussed in this chapter maintains that, in very truth matter is not the "empty thing," the collection of "negative attributes," which it is customarily supposed to be. Instead of being dead, it is "full of most active life;" instead of being shapeless, form is its "inseparable attribute;" instead of being crude, it is "infinitely delicate" (not simply, it would seem, in a quantitative way, but æsthetically so); instead of being worthless, it is "of the highest importance" (naturally enough, since IT includes everything worthiest as well as most worthless); instead of being senseless, spiritless, or thoughtless, it is "capable of the highest evolution of thought," etc. All this is IT. And we will call it "Matter;" and the song to be sung in its praise shall be: —

> "*Ist dem nicht, was ihr Materie nennt,*
> *Der Welt urkräftig Element,*
> *Aus dem, was immer lebt und webt,*
> *Empor zu Licht und Bewegung strebt?*"

In the Second Book of that strange mystical writing, *Pistis Sophia*, "Andrew questioneth Jesus how men in bodies of matter can inherit the kingdom of light." The reply he obtained is as follows: "Know ye not, and do ye not understand that ye are all angels, all archangels, gods and lords, all rulers, all the great invisibles, all those of the midst, those of every region of them that are on the right, all the great ones of the emanations of the light with all their glory; that ye are all, of yourselves and in yourselves in turn, from one mass, and one matter and one substance? Ye are all from the same mixture."

He who understands this mystery, we are assured by *Pistis*

[1] See Büchner, "Force and Matter" (Eng. trans.), p. 55.

Sophia, understands all mysteries. "That mystery knoweth why the twelve immovables rent themselves asunder, and why they were established with all their orders, and why they emanated from the parentless.

"That mystery knoweth why the super-depths rent themselves asunder, and why they set themselves in one order, and why they emanated from the parentless.

"That mystery knoweth why all the indestructibles in their twelve orders rent themselves asunder, and why they were set in a single order, emanating one after the other, and why they were divided and formed separate orders, being also uncontainable impassables, and why they emanated from the parentless."

Extremes meet; and, not infrequently we find the explanation of the world offered by the theory of a non-spiritual and impersonal Substance differing in its metaphysics in no fundamental way from that offered by the most extravagant declaration of religious Gnosticism. But, as Lotze has well reminded us, it is not the business of philosophy to construct the world but to understand it, as it is given to us in our actual experience. And neither the device of a self-differentiating Matter that has no Spiritual Being, as its very essence, so to speak, nor the abstraction of an unrelated and wholly uncognizable Deity will serve either science or philosophy as a satisfactory principle of explanation. But the defects of both will become even more obvious as we pass on to the considerations of the next chapter.

CHAPTER XVII

NATURE AND SPIRIT

When the attempt is made to explain the totality of man's experience with the world of things, there are two kinds of this experience which make the word "Matter" seem especially inappropriate to summarize the required explanatory principles. These two comprise all that we are accustomed to group together under the terms, Life and History. Both of these terms are somewhat vague in their content; and they are undoubtedly meant to be comprehensive in respect of the ranges of knowledge and conjecture over which they extend. Nor should it be forgotten that, however much we may capitalize, emphasize, and personify them, the terms remain, after all, abstractions — themselves composed of many less highly abstract conceptions, that serve, each one, to cover a large field of phenomena.

Neither Life nor History can, strictly speaking, effect or explain anything. In this respect they are like the terms Being, Force, Law, etc. It is only when "Being" is no longer *pure*, or *mere* concept of existence, but is recognized as a particular self-active will, sustaining manifold ideal relations of reciprocal dependence to other wills, that we recognize the presence, in concrete form, of actual existence. So, too, is it only as Force is an active relationship, whose universal type is the forth-putting of this same being which is consciously known to the Self as its own will, that the different forms of so-called force accomplish or account for anything in reality. Thus the conception of a "unity of forces"

becomes identical with that of a principle which controls, and makes systematic by directing toward adopted ends, an indefinite number of such active relationships. In like manner, to explain the phenomena of life and of history, we must appeal to realities that have the capacity of entering into all the active relationships which it is intended to cover by these terms.

There are good reasons, therefore, why there has always been hesitation before the claim that "Matter" — of itself, as it were — can live and undergo an historical development. The real Being which effects the purposes of a World-Ground, must include an explanation of the phenomena offered to observation by the system of living beings, and by the development of living beings through a complication of reactions, one upon another and on the basis of their physical environment during countless ages of time. Let it be granted, then, that *matter* seems to be a good term — even mere matter, or "brute, inanimate matter" — to summarize the forces and laws needed for the physical composition and behavior of the planets, and for the combination and separation of molecules and atoms under the laws of cohesion and chemical affinity. But the phenomena which men group together under the words, life and history, appear — at least at first — of too complicated order, and mysterious genesis, and uncertain character, to be assigned to this lower principle alone. And yet these phenomena cannot be separated from their relation to the phenomena with which physics and chemistry deal. The world is *one*, we are continually reminded, in some valid and suggestive meaning of the conception of unity. Living beings, from those lowest forms which it requires refined instrumentation to distinguish from "brute, inanimate matter," to the highest and most spiritual of human forms, are themselves composed of material elements. Their thermodynamics, and the electrical and magnetic doctrines of their behavior, are not essentially different from the physical science

of all material masses and molecules. Physiological chemistry is still, in good faith and in the full meaning of the word, a branch of chemical science. And doubtless the protagon in the brain of Aristotle or of the Apostle Paul would have analyzed into something like $C_{160}\ H_{308}\ N_5\ P\ O_{35}$.

There is, then, a depth of mystery in the constitution and behavior of living things, and a significance of tendencies, drifts, and strivings toward some far-off goal, in the history of living beings and, especially, of human beings, which makes the boldest advocate of the sufficiency of physical substances and forces inclined to seek another term for his enlarging conceptions. Such search is rewarded, with at least a temporary satisfaction, by adopting certain uses of the word "Nature." This word stands better for that which has life in itself. And when the term is endowed with a sufficiency of at least quasi-personal attributes, and spelled with a capital letter, it inflames and elevates the imagination, and soothes the remonstrances which a philosophy that ends in pure abstractions, or in merely figurate conceptions, is apt to call forth. Our "dame Nature" — *beldame*, in both the older and the newer meaning of this compound — may even betimes be called good; although she is always in fact "red in tooth and claw." Nature is thus manifestly conceived of as having the constitution of a Self; but why should the anthropomorphism involved in this conception, which is as obvious as anything of the kind can possibly be, seem less unsatisfactory than that of the conception which religion is accustomed to accept?

He who knows Nature and her ways, knows all that really is subject of scientific investigation. She is the "uncreated and indestructible, alone, complete, immovable, and without end;" and to have a full acquaintance with her is to "know the origin of all things on high, and all the signs in the sky, and the resplendent works of the Sun's clear torch, and whence they arose." But not only this: "For she rules over all painful

birth and all begetting, driving the female to the embrace of the male, and the male to that of the female." . . . "Does Parmenides" (in words like the foregoing) "refer to the world of sense or to the world of ideas, to concrete existence or to abstract being; to matter or to spirit?" Doubtless the correct historical answer to this inquiry would be somewhat as follows: Parmenides, like his predecessors and contemporaries, did not make the distinctions involved in the precise answer to questions like these.[1] And yet in all these earlier utterances of philosophy, as in all attempts that have ever been made or that can ever be made by philosophy, the germs of the same fundamental and necessary distinctions appear. For Being — in totality and as such — is contemplated, described, and understood from two points of view, the internal and the external. This is true of the work both of science and of philosophy.

It is only when taken together as an Absolute Whole that Reality can be spoken of as uncreated, indestructible, perfect, and eternal. But in order to be comprehended as thus perfect and eternal, this Absolute Whole was virtually regarded by Parmenides and the early Greek philosophers, both as Subject and as object, as Maker and system of things made. As itself uncreated, IT creates; as itself indestructible, IT destroys and brings into being the particular existences. IT is itself perfect; but things are fragments, or parts, or individual products, of IT; and its eternity is maintained as a permanent Principle somehow presiding over and controlling the ceaselessly actual flux of particular things and souls. The individual males and females seek each other's embrace; and so the multiform species of living beings continue in existence. But *She*, who is the Mother of all, "rules over" and "drives" together these individual children of her own womb.

The same necessity to which early Greek philosophy responded in so naïve and unconscious fashion has shaped

[1] See Burnet, "Early Greek Philosophy," p. 178 f.

into more definite forms the modern scientific and philosophical conceptions. Because *matter* alone does not seem rich enough in content, or potent and varied enough in its concealed resources, or sufficiently capable of apprehending and holding steadily to the required ideals, therefore men have chosen "Nature" as the more genial, plastic, and suitable term. In her, and through her, and by her, and for her ends, all particular things exist, including the lives and the history of the race of "speaking men." Let the hidden but potent reason for this change of words not escape us. *It is because the latter term is more easily capable of the necessary personification.*

Immediately, however, the enlargement of the conception which the word "nature" seems to provide, in the special interests of an explanation for the interconnected phenomena of life and of history, requires the old distinctions to be made anew. The Absolute Whole divides itself again into two parts. These parts are not, indeed, separate and distinct halves of a total sphere; nor can they be kept asunder so as to remain independent of each other for their more complete significance and their more effective action. The rather are they two interdependent aspects of the same totality as seen from two equally necessary points of view. These points of view are the more internal and subjective, and the more external and objective. Nature, as an Absolute Whole, becomes two-fold; it is no longer simply nature as the common breeding-place of life, but as herself a Universal Life. Her being is no longer looked upon as the undifferentiated medium or soil in which all development takes place. She is herself the Ground — the inner principle of development. Nature is no longer a system of things already formed, or considered from the outside as a mere collection of data arranged in a series, in unending time. She is a Force, formative and progressive according to ideas. Like the total Being of the Greek philosopher, she is both Subject and

objects, Maker and things made. Nature has become divided in some sort against herself; her total Being includes *natura naturata* and *natura naturans*.

Such pressure brought, so to speak, upon the fruitful womb of nature in the effort to make her bring forth the Absolute only results in the birth of another pair of conceptions allied to those already discussed. For Nature, when considered as an Absolute Whole, must be the cause, not only of nature considered as the system of material things, but of spirits as well. And now Nature *and* Spirit serve to summarize two groups of conceptions under which, in their co-operative influence, all scientific and philosophical explanations fall. Nature in the large, as an eternal but unspiritual force, produces by her supremest effort something spiritual, or rather an indefinite number of spirits; and these spiritual beings then, in some sort, come to supplement her in her work of evolving life and of driving man along his course in history. For who can deny that man, the most spiritual of all the beings of which we have any immediate and verifiable experience, if not the only species of being entitled to be called "a spirit," is himself a product of nature as soon as the latter is conceived of as an Absolute Whole?

When, then, our theory of reality speaks of "nature *and* spirit," it acknowledges, as belonging to the system of real existences, two species of beings which it is necessary to assume as different and yet somehow co-operative in order to account for the totality of man's cognitive experience. But nature and spirit, in the lower meanings of these two words, are both products of Nature, in the larger and higher meaning of the one word. Therefore, natural science proceeds to spell this word with a capital, and to attribute to it all life and all history, including human life and human history. But religion has the surer instinct and the better showing of reason when it seizes upon the other word and, spelling it with a capital, exalts it to the position of the Absolute.

Yet if Spirit itself be conceived of as an abstraction, it is no better fitted than its humbler sister to serve as the explanatory principle of our experience with ourselves and with things. There are spirits; and there exists a community of spirits. This is the race of men; and history is, in a measure, of their making. But let no one speak of "Spirit," spelling it with a capital as though its mere use in the singular number indicated any corresponding Unity of Reality. To violate this injunction is to talk the language of poetry or of religious myth, and not that of science or philosophy.[1]

The view which — to speak truth of it — denies the efficiency and value of Spirit as a unifying, explanatory principle, although making use of the term, is quite the opposite of that which we have been advocating. Our view compels us to turn the whole thing "face-about," as it were. For in our view, the one fundamental reality, the actual Being whose

[1] In his chapter discussing the general conception of "collective spirit" (*Gesammtgeist*) Wundt justly concludes that this conception, in order to gain clearness, must avail itself of one of two auxiliary conceptions; these are the conceptions of "organism" and of "personality." The first of these undergoes essential changes when we attempt to apply it in a collective way; for the so-called "collective organism" has an unlimited capacity for self-organization and transformation which is unlike anything we find belonging to the individual living body. But the second of these conceptions can have its actualization only in society, or in the State, which is a collection of personalities rather than a collective Personality. The latter, therefore, is not capable of actualization. Hence it would appear that nothing in reality can exist which answers to the term, One Absolute or Infinite Spirit, other than the — "perhaps unattainable" — ideal of a quasi-organic union of humanity, under ethical principles, into the State. But this, it will be seen, is precisely the opposite of that procedure which we have followed, — namely, of translating the abstract and otherwise unintelligible terms of philosophy into concrete and indubitable experiences.

In his "Science and Christian Tradition Essays" (p. 38 f. and note on p. 39), Professor Huxley asserts, in the first place, that the "principle of scientific Naturalism does not lead to the denial of the existence of any Supernature; but simply to the denial of the evidence adduced in favor of this or that extant form of Supernaturalism." He then immediately explains: "I employ the words 'Supernature' and 'Supernatural' in their popular senses. For myself, I am bound to say that the term 'Nature' covers the totality of that which is. The world of psychical phenomena appears to me as much a part of 'Nature' as the world of physical phenomena; and I am unable to perceive any justification for cutting the Universe into two halves, one natural and one supernatural."

characteristics are recognized by the categories, whose work is both nature considered as the system of material things and also all the spirits of men considered in their historical development, is the Absolute Self. And the innermost essence of such an Absolute Self is Spirit. From Spirit, then, come nature and all spirits; and in dependence on this Spirit they live and develop. And the proof of this view lies in the fact that to rely on nature as a unifying principle, it is necessary to include in our conception of nature the characteristics of a spiritual life. For a Nature which were not tantamount to Infinite Spirit could not be considered as an Absolute Whole — "uncreate, perfect, and eternal." It is this Spirit which —

> "Lives through all life, extends through all extent,
> Spreads undivided, operates unspent."

It cannot be too carefully noticed at this point what is the exact claim made for this doctrine of the spiritual nature of all reality. It is not the claim of a proof, or series of inferences, which attempts to make its way along the path of an infinite *regressus*. Nor is it the mere hope that, starting with the conception of Nature, whether as a collection of brute and inanimate masses and bits of matter, or as a system of living and developing beings, one may legitimately reach backward to the existence of Spirit as their ultimate source and final ground. Our attempt is not directed toward showing the necessity of positing spirit *and* nature, — two beings which divide all space between themselves, and whose priority of residence and jurisdiction must be settled on the basis of considerations somewhat foreign to the character of both. The proof we offer is rather the discovery, reached by reflective thinking upon the categories, that the special grouping of these categories under the term "nature" does not change the real character of the conceptions themselves. These conceptions are all, when applied to things, the externally projected

predicates of selfhood as known in the unfolding experience of the individual man and of the race. So that the progress of the argument — if the course of such reflection is to be called an "argument" at all — is rather inward than backward.

And, indeed, the preceding centuries of talk about a *regressus* as the way in which the plain man's consciousness, or the observations of science, or the speculation of philosophy, reaches from the natural system of things to the spirit that is in them, is in violation both of fact and of sound reason as well. There is not, and there never has been, any "brute inanimate" matter; there is not now, and there never has been, any system of natural objects bare or devoid of indwelling Spirit. Matter, considered as wholly without the characteristics of selfhood, is, as yet, not matter; it is nothing, and can do nothing; it is nought; it is not. And when we supplant this lower conception by the more vital, effective, and universal term, Nature, we only acknowledge in a not less impressive way the same essential truth. This term, indeed, serves the great purpose better than does matter; it is a richer and more satisfactory grouping of the necessary conceptions, because it is the more obvious and richly personal and spiritual term. To get *from* Nature *to* Spirit, then, we have only to get *more deeply into* nature. For whenever either mythology, or science, or philosophy makes due recognition of the extent and potency of this Absolute Whole, as an explaining principle for what is otherwise particular and isolated, it only expresses the universal insight of man's mind into the real character of the world of things and of spirits. *Except in so far as it is known by having additional characteristics of Spirit, Nature is as "brute and inanimate" as was the old-fashioned but now extinct conception of matter.* In a word, Nature, too, is nothing, and can do nothing, without Spirit; and only in so far as it is essentially spiritual, can it be known as the principle which sums-up and embraces all particular realities and all actual events.

It is customarily supposed that the modern discoveries in the chemistry and physiology of living organisms, in the development of the living individual, and in the evolution of living forms, modify the foregoing metaphysical conclusions. This supposition is to a certain extent true. But the modification is in the direction of enforcing the essential truth of the same conclusions, while changing somewhat the points of view assumed in establishing them. Modern chemical and biological science does nothing in the direction of contradicting or abolishing these fundamental conceptions. The chemical, biological, and evolutionary points of view for the phenomena called "vital" only reveal the spiritual character of natural objects in a new and most impressive way. For they show us under what an amazing variety of interconnected forms this Absolute Whole is ceaselessly displaying its genetic and architectonic energies. But every new display of those forms of force which lay the origins and determine the developments of things raises the same unchanging and fundamental ontological problems. How can Nature be conceived of as capable of accomplishing this? Only after the analogy of the Self-active Being that puts forth its will in many directions, all of which are controlled by immanent ideas and designed for the realization of ideal ends.

The controversy which has now raged for some time over the propriety of the term "vital force" is not without its suggestions and its lessons, in this connection. Much of this controversy has done little credit to the clear thinking of either of the contending parties. As though the facts could be interpreted or explained without resort to some such conceptions as are voiced by this now discarded term! As though, on the contrary, to secure the use of the term would, of itself, either assist in scientific explanation or decide men as to their choice between two diverse systems of metaphysics and theology! God is not dethroned, if this abstract term be discredited and cast out of the catalogue of biologists.

God is not established and the more truly worshipped, if the ancient phrases and formulas are preserved after they have lost their ancient significance.

The real progress of biological science has been in the way of attaining clearer and more precise knowledge concerning the characteristics of all so-called living bodies, and of the conditions under which they arise, develop, and succeed each other in countless generations. On these main points our knowledge, although, like all human knowledge, shading off into conjecture as the outlook into time runs either backward or forward, is now in a comparatively satisfactory state. So far as the testimony of our actual experience reaches, those physical existences which we call alive can do certain things which non-living beings cannot do. They can grow, can multiply themselves after their own kind, and can move — at least their constituent molecules, if not their entire bodies — as from what in our ignorance we are obliged to call an "internal impulse." Matter, when it is "endowed with *life*," as we figuratively say, becomes metabolic, reproductive, and capable of automatic, or internally originating, movements. As to their origin, furthermore, these so-called living beings are at present never known to us to begin to exist, except in dependence upon the reproductive process. Whatever biologists may be pleased to conjecture respecting occurrences in some far-off time, and under greatly changed conditions, so far as we now know, living beings come only from pre-existing living beings. Nature, the Mother of all, when she conceives and brings forth a living child, demands as her present unvarying rule that this production shall be *through* some other living child of hers. This is as true of the cell, the unit of life, as it is of the most complex and highly developed organism.

How, then, shall that metaphysical way of speaking which, in spite of all protests to the contrary, the particular sciences are forever compelled by the very constitution of the human mind to employ, describe and explain the phenomena of

life? Physics is permitted to speak of the "forces" of gravitation, of cohesion, etc., as belonging to all masses of matter and as explanatory of the behavior of masses under manifold relations. It also theorizes about forces of light, of electricity, and of magnetism as residing in the ether, and through their residence therein effecting many subtle changes in tangible and visible things. Chemistry, in its turn, deals with a new set of genetic and architectonic forces; nor does it hesitate to designate these forces by appropriate names. But what do the physical and chemical sciences really mean by this, their permissible mode of speech? Surely not that there are separate entities, to be called by the names of these different forms of the activity of masses, molecules, and atoms, which entities are, however, also to be thought of as actually coördinated under one general head. All the so-called physico-chemical forces are only the ways of the reciprocally determining, active relationships which the different members of the system of real material things actually maintain. When, then, we come to new ways of this omnipresent, active self-relating of Nature, in the case of living beings, — as wholly "new" as any of those which chemistry is compelled to add to the forces known by physics, or as the physics of light and electricity is compelled to add to the physics of material masses, — why should we not indulge ourselves in the same helpful figures of speech? The masses, the molecules, the atoms of the living things, — or whatever sizes of the material entity you choose to make the seat of the necessary forces, — are certainly behaving in ways quite beyond the known habits and capacities of non-living things. Here, then, is a quite new display of the genetic and architectonic power of Nature. Our good Dame is bringing to pass something rather original in her perpetual economies. She — "the uncreate and eternal" — is now teeming with products that *can*, what hitherto her products *could not*. These new creations of hers can, of themselves, create; and what they create can grow; and as they grow,

they can (like every amœba) not simply be moved from without, but they can move as by a " will of their own."

Let biological science, then, not be disturbed if it is found convenient to speak of " vital force," as covering that special display of genetic and architectonic energies which Nature makes in the case of all living beings. Or rather, it would seem more fitting to speak of vital *forces ;* such as, for example, the metabolic, the reproductive, and the automatic. Some theory of " Vitalism," or its equivalent, will always be a necessity for biological science.[1]

But at once it is objected that this manner of speech does violence to, or shows disrespect toward, the dignity of the all-powerful and god-like atoms. For life, we are reminded, is only a peculiar concurrence in the germ followed by a course of peculiar aggregations, segregations, etc., affecting those atoms which constitute the organism. What, however, does such an objection really accomplish ; or, in case the objection be removed or disregarded, what has really been gained ? The facts certainly remain the same. A sufficient explanation must somehow be found for the real unities and for the actual active relationships, attained and maintained. A vast variety of correlated forces, belonging to one substance, called Matter or Nature, comprises the metaphysical outfit of the chemico-physical sciences. Is not, in reality, each one of these forces — gravitation, for example — only a peculiar way in which the masses, molecules, and atoms of matter behave toward each other, under certain definite circumstances ? But the truth of

[1] Nothing is more significant of the rational necessity for such a metaphysical conception than the present tendency of biology to return from its position of scorn toward all theories of "*vital* force," or "*vital* energies," to a new and improved statement of the same conception. For example, a recent writer, after declaring that "the life principle, varying only in degree, is omnipresent" . . . and that "the elixir of life lurks in every mineral, as well as in every flower and animal throughout the universe; it is the ultimate essence of everything on its way to higher evolution," goes on to affirm: "This may be called the poet's view, but it is forced upon us as also the highest generalization of modern science."

all such philosophical interpretation as this remains the same throughout all forms of positive science. And why should biology alone be denied its sacred metaphysical rights and privileges?

We insist, then, upon the propriety of continuing that convenient but figurative metaphysics which speaks of "vital forces" as assisting in the accomplishment of the phenomena of living beings. These living beings are, because they are material and have mass, necessarily subject to all the forces which physics recognizes as working in its peculiar domain. Because they are composed of molecules which have a complicated chemical constitution, and are built up under conditions which favor or discourage more or less well-known chemical combinations, they are also to be regarded as subject to chemical forces. But because these same living beings do actually achieve new forms of synthesis and architectonic activity, they may also properly be regarded as displaying a new kind of so-called "forces." This is only another way of saying that such realities have the active properties summed up under such words as "metabolism," "reproductivity," and automatism."

If now it is urged that the chemical laboratory can simulate, or even perfectly reproduce, certain of the simpler organic compounds; and that a few of the most hopeful among the chemists of to-day confidently look forward to the time when the chemical laboratory will be able to reproduce all the organic compounds, or even to manufacture "protoplasm," the reply to such claims and such hopes is not difficult. Very well, but this does not in the least alter the case. Chemical science will thus serve biological science, only as it learns how to avail itself of the so-called forces of Nature as they are displayed, under certain conditions, in a definite way; but the variety, the wonderful character, the metaphysical implications, of this her display of so-called forces will remain unchanged. And the higher powers of the microscope are

daily making more wonderful the atomic mechanism of the protoplasmic unit, the living cell.

Suppose it to be further urged that the phenomena of life may all be regarded as special forms of the chemical energies of the atoms, dependent only upon their being brought together in peculiar quantitative combinations, under definite fixed conditions. Very well; but this, too, if granted, does not essentially alter the case. For metaphysics does not aim to deprive the sciences of physics, chemistry, and biology, of their *Substrate* — whether they wish to take it in mass, or as divisible into molecules and atoms. Metaphysics aims to interpret into the ultimate terms of man's cognitive experience all the conceptions involved in the scientific assumptions of a "substrate," moved by "force," and obeying "law," and entering into manifold forms of mutually determined "relation," etc.

It will, however, be granted by way of comity between metaphysics and these sciences — we suppose — that *single* atoms and molecules cannot produce the phenomena which living beings display. For these phenomena — to return to our first point of view — show the characteristics of forms of energies that are genetic and architectonic to a high degree. Countless multitudes of atoms and molecules, with a marvellously great variety of properties belonging to their various kinds, are somehow, in fact, made to coöperate to the building of a composite substrate whose performances answer to specific ideas. Pack all the forms of chemical energy that are known or can be imagined, into the single atoms, and all the more is the mind finally compelled to make an appeal to some conception that shall actualize itself in terms of force that unites the single atoms in a definite and purposeful result. It is this *compulsion* which has made the use of the word "Nature" seem so appropriate as a title for the life-giving Mother of all the particular forms of life.

The demand which seems obvious enough even when we

consider the constitution and behavior of so-called "undifferentiated protoplasm," becomes irresistible under the weight of the facts disclosed to the more extended and recent view of biology. Here our minds are invited to consider reflectively what is implied in the evolution of the individual and in the development of species. Nature must be writ large and conceived of as somehow presiding over the individual masses, molecules, and atoms, in order to conceive of her as evolving the individual living being and developing the various related forms of life.

Under what conceptions it is necessary to bring the history of the individual living being has been made the repeated subject of discussion in the previous chapters of this work. Such a history is itself the very type of all human conceptions of a "Becoming," which arises in, and is carried forward by, a fortunate combination of genetic and architectonic forces, and which conforms in reality to human ideas of form, law, and final purpose. Such a history *is* the very idea of development realized. This position explains not only the significance of those naive expressions which fall from the plain man's consciousness as he observes, or listens to, the marvellous story; it also interprets the true meaning — however concealed — of all the language which biology itself employs.

"If" says Haeckel,[1] "the formative power of the formless protoplasm calls forth our highest admiration among the remarkable *Polythalamia*, this is further increased when we turn to the closely allied *Radiolaria*. In these most interesting primal beings we meet with the greatest variety of beautiful and strange forms that can be found in the organic world." . . . "We have as yet no conception of the significance of their varied, strange, and exquisite forms, nor of the way in which they are shaped by the formless protoplasm of the *Radiolaria*." It is indeed worthy of "highest admiration" to see the "formative power" of that which is itself "form-

[1] See his "Realm of the Protista," pp. 38 and 46.

less," shape those molecules of matter on which it can lay its grasp, into such a variety of "strange and exquisite" forms. And this æsthetical feeling which is aroused in the observer, because displayed in the thing observed, is one of many sure signs of a fundamental kinship between the two. In fact, however, as the results of the previous discussion of the ideas of form, law, and final purpose have clearly shown, the protoplasm out of which Polythalamia and Radiolaria are said to come, is only *relatively* formless. Their so-called protoplasm, like every other living being, is already both formed and formative; it is both the product and the possessor of the genetic and architectonic forces which all living beings display. Furthermore, when Haeckel confesses ignorance of the significance, and of the manner of that shaping process which results in the varied and exquisitely formed coming out of the formless, he only emphasizes the universal conviction of every one intelligently acquainted with natural objects. All such forms — it is assumed — have some significance, however this significance may be hidden from us; and the manner of nature's shaping of her forms is in accordance with immanent ideas. But to imply this is to give to universal Nature, in so far as she gets expression in the particular nature of individuals, or in the variation within limits of the species, the characteristics of self-hood. The relatively formless *somehow* — God knows how, and man may some day know — significantly shapes, of itself, this variety of strange and exquisite forms.

The entire Life of Nature is a ceaseless repetition of essentially the same performances, so far as the science of biology is concerned — but so joined together into an historic process that it incontestably appears as a progress toward some far-off goal. Looking backward, indeed, the present indefinite variety of forms seems to withdraw itself into the relatively formless; but if this retreat of living beings be followed in imagination and thought until they all rest in the arms of the

formless atoms, our conceptions of the explanatory causes of the natural history of living forms remain unchanged. The atoms are; and their collective capacity must somehow serve as the "sea of activities" in which all the sources of life and evolution are as yet congealed.

> "*Alles Leben der Natur*
> *Ist ein Meer von Thätigkeiten;*
> *Ohne Rast auf ihrer Spur*
> *Muss Du mit dem Ganzen schreiten.*"

The evolution of the organism of the individual from its germinal condition to its completed form, through the peculiar and complicated reactions of the forces seated in its constituent elements upon the forces belonging to its environment, may be made the object of present-day observation. But the case is by no means the same with the development of the totality of living species. Precisely how the relatively formless beginnings proceeded to employ the "formative forces" inherent in them so as to shape such a variety of "strange and exquisite" forms, we know far less about than we know about the method and significance of the procedure of the "formless protoplasm" of Radiolaria. For here biological science is studying the larger work of Nature as, through indefinite stretches of time, she has been using her synthetic and architectonic energies to produce all manner of living things. It is perfectly clear, however, that a wonderful conjoint action of all the natural forces has somehow been secured. For when considered as a totality the living beings of the world, as known to man, constitute an interconnected system the members of which are dependent upon each other in countless subtle ways; and all of which are dependent for their existence, continuance, and place within the system, upon the coöperation of all the forces known to physics, chemistry, and biology as well. But the metaphysically important characteristics of this picture are not dependent

for their verification upon any particular form of the current theories of biological evolution.

"Inheritance" and "variability" are words which cover certain conceptions, based on patent facts, that are necessary to every theory of the development of species. These conceptions, combined with those which sum up the characteristics of vital forces in relation to the forces provided by the environment, constitute the equipment of categories which, so to speak, modern biology possesses; and which it must employ in framing its answer to all demands for an explanation of vital phenomena, as displayed on the scale of Nature at large. These two words (inheritance and variability) summarize experience with the behavior of successive generations of living beings which stand to one another in the morphological and functional relations dependent upon their reproductive activity. "Heredity" emphasizes our knowledge that something connected with the transmitted germs determines a likeness to the organism from which these germs come. "Variability" emphasizes our knowledge that somehow, whether through minute differences in the germs themselves or on account of the different subsequent conditions to which these germs are inevitably subjected, the likeness between the progenitor and the descendant is never complete. But in order that a true and successful development of species may take place, both heredity and variability must harmoniously combine. This is to say that the forces which tend to the conservation of similar forms and similar functions, and which are thought of as due to the fact of reproduction, must coöperate with the forces which tend to differentiation of forms and functions, whether these latter forces are thought of as attached to the act of reproduction or as exercised by the environment.

It is at once clear to any one accustomed to reflect carefully on the significance for reality of terms current in science or philosophy, that we have here to do with a grouping of con-

ceptions as comprehensive as they are elastic. But it is *the genetic and architectonic power of Nature* which is emphasized by all these terms — all the more impressively, by splitting this power up into a variety of details. The facts appear, at first, simple enough; from the parents come, by generation, organisms that are essentially like, and yet are always unlike in a multitude of minute particulars, and are sometimes strikingly unlike in one or more rather important particulars. As this reproductive process goes on through the ages, under a great variety of conditions, the different species of living beings succeed one another in a more or less orderly way. If we accept the standpoint of Darwinism, it is "heredity" which we may feel ourselves entitled to take for granted; and then the burden of fixing the limits and the direction of variability falls chiefly upon conditions external to the organism. But if we accept the more modern and seemingly more tenable view, it is "variability" which should be assumed as "the expression of the fundamental energy of the organism;" and "heredity is the expression of the acquired adjustment of the organism to the conditions of its existence."[1] Inheritance then becomes an acquired characteristic; but variability is the primary genetic phenomenon of all organisms.

In a word, then, Nature must put forth all her energies in a genetic and architectonic way, coördinating them and yet modifying their particular combinations through countless ages of time, if the development of interdependent but specifically determined organisms is to be attained as the result. She must differentiate her own Will in manifold ways; but she must still employ these differentiations to the attainment of specific ends. She must not only "drive" the males and females to each other's embrace; but she must shape each relatively formless bit of protoplasm which thus results — each impregnated germ of a living being — so as to conform with the two

[1] See Prof. H. S. Williams, in "Science" for May 27, 1898, p. 730.

correlated principles of heredity and variability. She must do this through thousands and millions of years, — if we are to trust the calendar which modern evolution has prepared in her name. And these same formative forces must shape more and more complicated, more and more highly developed, organisms. The full significance of this, neither the scientific nor the philosophic investigator can understand; for the ways of the natural formative forces are hard to discover, and may never be very fully known. But ignorance cannot dictate to knowledge the conceptions and the language which the scientific observer or the philosophic thinker must employ. All these conceptions, and all the language necessarily used to express them, have meaning and justification only from one point of view. Nature thus regarded — and so she is regarded, and only so can she be regarded, by natural science — is endowed with the fundamental characteristics of Selfhood. To escape from this conclusion by crying out against "anthropomorphism" is to lack the courage of humanity's most unalterable convictions. And when we further know what the inmost reality of such Selfhood is, we see that to speak of Spirit as a possible inference lying outside of, or behind, Nature, is to overlook the plainest features of our case. Not Nature *and* Spirit, but *Spirit as the true and essential Being of so-called Nature*, is what the conclusions of science and of philosophy alike confirm.

CHAPTER XVIII

THE ACTUALITY OF THE IDEAL

In a natural glow of enthusiasm over the successes of the principle of mechanism, both physicist and philosopher have been known to say: "Give me matter and force and I will construct the world." From long before Descartes until the present time this manner of world-building has seemed most captivating to certain minds; — all the more captivating because it so readily dispenses, on the one hand, with the mystery which the unexplained Cosmos presents, and on the other hand with the need of any Mind to serve as a coördinate principle of explanation, by the side of Matter and Force. But we have already looked a little way into the wealth of this gift which is required in order fully to meet the demands of physics and of a purely physical philosophy. The world can be "constructed" of matter and force, only when these agents are first endowed with all the qualifications necessary for so vast constructive ability. All this the most recent advocates of this mechanical theory of world-building aim to cover up by repeating conceptions whose inadequacy has been exposed over and over again, in the history of reflective thinking. "Force," says a recent writer, "bestows life and motion on matter; matter is lifeless, without any power to move or alter itself. Force brings about all the changes in matter that our senses seem to tell us of; it is force alone that causes these, matter remaining ever the same." The same writer then thinks to furnish a lucid and sufficient account of the origin of life by affirming that, as soon as the physical conditions of the

earth's crust permitted it, millions of smaller masses of molecules established "inner relations;" then some of them increased in size by "an influx of matter and force;" and when later there "occurred opportunities for progress," these bodies "discovered for themselves a sphere of activity," etc., etc.[1] Thus by infinitely varied combinations and variations the present infinitely varied and orderly system of things, including man himself, arose.

In the modest demand, thus expressed in the now celebrated sentence, there lurks a huge fallacy which is customarily unchallenged and even unperceived. "Give me the matter and the force, and *I* will build for you the world." Thus matter and force are brought forward as the theoretical coöperating factors, or constituents, of the proposed world-building; but what is the part left for the "I" in the actual process of world-building? Now one can scarcely think that any author of such a proposal means to challenge our admiration for *his own skill* as a world-builder, in the following terms: "Put at my disposal the sum-total of 'lifeless matter' and the gross amount of the world energy; and then you shall be told precisely how all particular things came to be as they all actually have been and are." For the *Ego* of this theoretical and purely hypothetical builder of a Cosmos out of matter and force, would certainly need *knowledge*, in order rightly to set about his monstrous task. His Ego as pure blind Will, or mere Being, could not construct a system of things. Indeed, nothing short of all knowledge, of omniscience, would need to be granted before this Ego could even tell how matter and force have actually built, and are still building, the world. Must, then, so proud a promise be understood to mean only this: the Omnipotent and the Omniscient One knows how the world was built, whether by himself or by some other,

[1] So, *e. g.*, Herr W. Kotzauer in an article in *Der Stein der Weisen*, which we select as an illustration, not on account of its merit, but on account of the naïve, outspoken character of its materialism.

out of matter and force. Whatever the sentence means, it is necessary to add a third at least coördinate factor in order to explain — not to say, effect — the actual construction of the world? Shall we accordingly say: "Give me matter, force, and *ideas* that correspond throughout to the reality, and then I will tell you how the world was built?" Or make me to be an Omniscient Will, and I will build you a World?

Throughout the previous metaphysical discussions we have constantly refrained from claiming to know already, or expecting ever to be able to discover, precisely how this actual infinity of things called the "Universe" came to be as it is. Metaphysics surely cannot give to man the valid history of the evolution of things; it must learn from the sciences what it can about this history. But the searcher after a system of metaphysics is not to be deceived by a purely figurative use — much less by a misuse — of abstract terms. Matter and force are terms which, when employed in this vague, general way, have only the value of abstractions. They stand for that "crude lumpishness" which may be considered as the substantial basis of all particular things; and for the additional necessity of somehow getting this otherwise "lifeless" stuff to work, if a system of such things is ever to come out of it.

In a word, every attempt to construct a world out of Matter and Force — however little way, or however far, such an attempt may go — virtually recognizes from the start the actuality of *ideas* of things. For that Being of the World, which is granted out of hand, must somehow come to something definite, must go in some direction rather than another; the undifferentiated IT must take on a succession of forms, under a variety of laws. But all this means absolutely nothing, unless the actuality of ideas be admitted as belonging to the essential nature of things.

To the student of the human mind in a broad way there are few phenomena more interesting than the sceptical revulsion, the spasm of agnostic terror, which seizes many thinkers

as they are brought to try final conclusions with a truth such as has been evinced in every chapter of this treatise. To many of the detailed applications of this central truth all minds readily assent. But from the truth itself — the truth, namely, that the world is known to be, only as it is an actualization of the Ideal — they strenuously dissent. Let us, then, at this point recall that epistemological assumption which our theory of reality — in common with every possible theory of reality, whether partial and unsystematic or aiming at complete and systematic form — thought it right to accept. The assumption was not that all ideas are true pictures of reality; nor was it that reality is for us, merely our idea. Neither was it that all reality can be known, or reduced to terms of our ideas. But it was that *the fundamental forms of human cognition are the unchanging forms of reality — so far as reality is known or is conceivable by man.* This assumption was no mere reaffirmation of the standpoint of the Kantian critique. The truth about human knowledge is not that the intellect of man constructs realities after its own pattern — phenomenal realities, merely; while so-called "things-in-themselves" remain forever unknown and unknowable by man. Neither is it the truth that *extra*-mentally existent realities somehow make themselves recognized by the mind, without consulting its nature, so to speak, and while remaining themselves quite foreign to the mind. But the truth is that all knowledge of reality is a commerce of beings which have an essentially common nature; and which have being at all, and enter into manifold relations, only as they have the same Ground. Therefore man could not have ideas of things, unless things were themselves, *somehow*, actualized ideas. Nor could he frame any justifiable or rational ideal of what actually is, — not, in this connection, to speak of what ought to be, — unless that whole which we call Nature, or the Universe, were, *somehow*, to be regarded an actualized Ideal. "Somehow," to be so regarded. For no

account can be given, either of cognition (which is the epistemological problem), or of the reality given in cognition (which is the ontological problem), without admitting everywhere the actualization of ideas. Neither selves nor things, neither the individual beings nor the Universal Nature which is the Mother of all individual beings, can be conceived of, or can really be, other than as the presence and power of immanent ideas is taken into the account.

All reality is known, then, only as an actualization of ideas. But now — for several reasons, and especially because of the fact that reality and idea are customarily distinguished as contrasted, or even opposed to one another — the inquiry after a more definite meaning of this phrase is raised. Such an inquiry is likely to be accompanied by the return in full force of the tide of scepticism and agnosticism which the first attempt at a system of metaphysics asks to have, at least temporarily, kept back. What, precisely, is meant by the "actualization of ideas"? and, How can it be maintained, as a truth on which the theory of knowledge and the theory of reality must unite, that the material things of which the world is made up are all to be known only as "actualized ideas"?

Idea and reality are necessarily contrasted, when by idea is meant only an occurrence in the stream of the individual's consciousness. The word is, indeed, vague; and although much employed in the earlier English works on psychology, logic, and epistemology, it is now more rarely and more cautiously used. Let us, however, for the moment, accept it in this vague and most comprehensive meaning. It then at once becomes necessary to make a very important distinction among ideas themselves. Some of them, according to this distinction, remain *mere* ideas; but others of them attain a peculiar significance and influence over the perpetual readjustments of the self to its environment, because they are held to be something far more than mere ideas. To this class belong such ideas as, by that common consent on which both

society and science are based, truly and faithfully represent realities. In a certain meaning of the word "actual," this word may be applied to both classes of ideas; all ideas actually are whenever they occur in the consciousness of an individual self — as actual events, real *momenta*, or constituent parts, of the total life of that self. But such ideas as faithfully represent realities sustain a different relation — so it is commonly thought — both to the stream of individual consciousness and to the world that is conceived of as lying outside of that stream.

Further experience with ourselves and with others shows how the principle of continuity applies even to this fundamental and valid distinction in ideas. For there never can exist a *mere* idea, if by this term be meant a phase of conscious life, that has no roots in reality, that nowhere takes hold on what must itself be considered as lying outside such passing phase. On the other hand, there is no idea — not even the clearest idea of the most concrete and indubitable actuality, as it occurs in the consciousness of the most exact and cautious scientific observer — that is not replete with elements which are the contribution of the peculiar individual mind, whose is the aforesaid idea. "The world is my idea," says Schopenhauer in the opening sentence of his metaphysical treatise, — "this is a truth which holds good for everything that lives and knows, though man alone can bring it into reflective and abstract consciousness." But this is "empty idealism," — to use Hegel's term. It can do nothing for metaphysical system but wander over the shifting field of the individual's consciousness, and attach its one label for all things to every specimen therein; it is "mine" and "mine" and "mine," whether it be the pain of toothache, the latest accepted hypothesis, or your personality, the realm of Nature, the reality of God. And yet, my world is also a more or less closely woven system of real beings and actual transactions which is the same as the world of other men. Otherwise science and social inter-

course of every kind were impossible, and even my own individual stream of conscious ideas could not be. Nature makes herself known in the current of my ideas, as she is made known to all men; but she has also her peculiar manner, special dress, distinct and individual voice, in revealing herself to me.

The ideas which arise in my individual stream of consciousness, — and thus all ideas arise for me, — but which are taken to be faithful representations of concrete, actual existences, are my so-called *cognitions*. Like the mere ideas, these cognitions are really existent only as they are events, actually occurring, in the life of the conscious self. But unlike those ideas which are spoken of as "*mere* ideas," and are therefore contrasted with, or opposed to, what is actual, all cognitive ideas sustain peculiar and significant relations to Reality. These relations are summed up for popular expression in the phrase "representative." In this their peculiar work of representation, cognitions show to us what is the true type, the essential characteristic of an actualized idea. Every "actualized idea" is, primarily, some phase in the life of a self. But any phase is called a "mere idea," and only the actuality of a passing event in consciousness is allowed to it, unless it possesses something more than simple ideality. This "something more" it gets, so far as the standpoint of psychology is concerned, by somehow raising itself to the position of a cognition. Ideas that can say "I know" take hold on a reality which is something other than merely an actual event in the subject, a temporary phase of the individual's stream of consciousness.

What now is it that ideas faithfully representative of reality, or in other words cognitions, are thought to have, which other and mere ideas do not possess? The answer which psychological analysis suggests is this: *Cognitions are not mere ideas, because somehow the whole Self goes into them.* In a word, if I wish to know that any phase of my own conscious life is no mere idea, but that just this phase strikes

its roots down deep into the reality of my own being, and of the being of the world that is not me, then I somehow manage to convert the idea into a cognition. This I do, in the simplest, most direct and primary way by a *deed of will*, which is accompanied or followed by the feelings of various kinds that give the impulse, the guide, the endorsement to a cognitive judgment. That any particular idea is "of" a reality and no longer "mere idea," I know whenever I can impute to the idea the testimony in experience of volitions and feelings of a peculiar kind. In other words, psychological analysis shows that every cognition is a complex of feelings, and a deed of will; and is not merely an idea, in the narrower meaning of the word "idea." If this analysis be continued into the domain of a critical theory of knowledge, it appears that only as man wills, and feels the effects of inhibited will, and does not *merely* ideate or *merely* think, is that commerce with reality gained in which the essential nature of cognition consists.

Further, the analysis of what it is for any being — whether Self or Thing — actually to be, and not merely to exist in the ideas of some other being (the answer to the metaphysical question as to what Being, in truth, is), brings the mind to a similar conclusion. Every concrete individual reality maintains its claim to the title "actual," only in so far as it is self-active, constantly guiding its own actions in manifold changing relations with other beings, according to immanent ideas. This very phrase, "immanent ideas," is the one which it was found necessary to substitute for the entirely vague and incomprehensible words, "form," "law," "development," etc., as applied to the otherwise "crude lumpishness" of things. For things, too, are known to be real only as they are *wills*, actively changing relations to one another under the control of common ideas. *Actuality*, for material beings as well as for ourselves, requires this same complex of essential characteristics, — viz. being self-active, in relation to one another, in obedience to ideas, and in pursuit of ideas.

We may, then, summarize those demands which we make upon every reality, and which we find fulfilled by every real being, in the following statement: *Ideas are actualized whenever they become consciously recognized as differentiating principles for deeds of will.* Or, to turn about the statement of this fundamental truth of metaphysics: *Self-active beings that have cognizable forms, and obey laws, and show adaptations to ends, are "actualized ideas."* Without regarding them as actualized ideas we cannot know either things or selves as really existing at all; and only as things and selves exist by conforming to the group of conceptions which experience attaches to the "actualization of ideas," do they exist at all.

The Self makes actual its own ideas by deeds of will that are directed by these ideas. This is a plain statement of the truth of fact which enters into all our workaday life, into all handicrafts, and into all art and all social intercourse. So long as I give no expression to my idea by a deed of will, or by a succession of such deeds, it remains a so-called "mere idea." We have repeatedly said that no idea can be considered as severed from all its roots in actuality. Each idea still remains *my* idea; and if its particular genesis is carefully inquired into, this, too, will be found in some kind of being that is *not merely* my idea. If, however, the mind wishes to impart to any conscious state that peculiar kind of actuality which makes it impossible any longer to consider such state as merely an idea, then the idea must be actualized as a formative principle for the will. I act, as both a willing and an ideating Self; and now my idea becomes actualized. This actualizing of ideas is illustrated by every simplest daily experience, and by the most complicated forms of planning and of execution — whether to a successful or an unsuccessful, to a wise or a foolish, issue. The movement of some bodily member, the drawing of a geometrical figure, the shaping of some external material, the taking of a journey, the contributing of influence to the mental life of some fellow man or to

the political and social fabric, may all exist merely in ideas; but these all, in order to become actualized ideas, must be set into reality as deeds of will.

So far as the Self, the actualizer of its own ideas, is concerned, each concrete actualization is a single, indivisible unity, as it were. It is true that the description of what we do with ourselves, in every actualization of our own ideas, divides that which in its living actuality is one and undivided, into subject and object, into faculties of ideation, feeling, and will. But the real unity is the whole Self — the conscious, self-active will, whose ideas are not actual occurrences, or entities, apart from its own being, but are immanent in itself. The simplest truth is, at the same time, the most complex, the most abstruse, and the most mysterious of truths: *I am myself, in reality, existent as an actualization of ideas.* And this is the same thing as saying that I am a will, active according to consciously recognized ideas.

But no individual human being can be considered apart from those other beings on whose existence and reciprocal influence every such real selfhood is dependent. I cannot actualize a single one of my ideas except in so far as I am dependently related to other real beings, and thus actualize my own ideas, in and through the changes in these other beings. Even in the case where my idea is of the very simplest, and the other being in which it is to be actualized is most nearly related to me, — most intimately under my influence, — the truth remains essentially the same. I have, for example, the idea of moving my arm — upward, downward, to the right or to the left, or in some other definite direction. This is still *mere* idea. To actualize it, then, consciousness must attain more of reality than to be a mere show-room, or stage, for ideas, whether of its own or of some other being. To actualize the idea, the mind must have the reality of being that belongs to Will; it must actualize itself as will in a deed of will. But it has already been said that no human mind can give to its

idea the simplest and most intimate form of actualization without being dependent upon that which is other than itself. If one's idea is to be actualized in one's own body, this body even must be regarded as other than the ideating and willing self. The will sets into reality the idea, and the volition in accordance with the idea, through some occurrence in a form of reality which has a being other than that of either the idea or the will. But this is to say that my idea becomes actualized when this other being acts in accordance with this idea. Thus those bodily movements, which are not mere physiological reflexes, express the mind's ideas and volitions in pursuance of these ideas. The product of the workman's tool, the concrete result of the artist's endeavor, the shaping of souls by the influences of oratory, or by education, or by example, are all instances of the actualization of the ideas of one individual being in the changes of a being other than itself.

All man's actualization of his ideas, in order to be understood or, indeed, to be brought about, must therefore take account of the so-called nature of other beings. No ideas of any man, however intense and clear those ideas may be, or however much backed up and pushed out into reality by strenuous deeds of will, can get actualized quite irrespective of the material in which this actualization takes place. This "other" than the individual self which has the ideas must have its say, too, as to what particular ideas shall be actualized in it; and also as to precisely how every such actualization shall come about. This significant truth the popular language, and science as well, is apt to cover up by speaking of the "nature" of things, of the "laws" which they obey, of the "forces" that reside in them, and of the "causes" that determine the behavior of the things. One cannot make chicory as good for the breakfast table as coffee, no matter how much one may cherish the idea or the will to accomplish this. And not only "if wishes were horses," but also if the

stones of the highway could be willed to take on the idea of acting like horses, then "beggars might ride." That would be by no means our world, however,— whether more nearly like Paradise, or hell, or a fool's dream, than our world is,— in which all manner of ideas could get themselves actualized in all manner of real things. All the beings of the world may thus be said to be actualizing their own ideas; but then they are all also actualizing each other's ideas. Further, most ideas they all refuse either to entertain as actualized by themselves, or to assist each other in actualizing.

What, however, is the meaning for a true theory of reality of all such language as the foregoing, which — although we gave it a figurative turn — is substantially that employed by science and by the people at large? Men talk about things as they do, because their knowledge of things forces them to recognize in things the actualization of ideas. That is to say, the reality of things, like the reality of the self, is intelligible only as both are thought to be self-active existences that, in all their changing relations to us and to one another, are controlled by immanent ideas. But the final meaning which the mind is obliged to give to the phrase, "actualized ideas," when this phrase is applied to things, remains essentially unchanged. The displacement of the older physical conception of "brute, inanimate matter," that must somehow have force come on it wholly from without in order to get possessed of the higher forms and potencies that belong to particular things, shows an increased insight into the true nature of things. Like ourselves, all material existences are known in reality to be, and what they are in reality is known to us, only as ideas become "the consciously recognized differentiating principles" of the forces they display; *i. e.*, of their deeds of will.

We do not indeed know how far each particular thing — man's body, the spinal cord of the decapitated frog, the white blood-corpuscle, the vibrating molecule or atom "electing its

affinity" — has the power to participate, so to speak, by co-consciousness, in its own different forms of behavior, its own obedience to law, its own adaptation to a variety of ends. We do know that we ourselves, the so-called crowns of intelligent and self-conscious creation, have this power in only a very partial way. Most of what we do, or seem to do, is actually done *for* us by One not-ourselves rather than *by* ourselves, as well as for ourselves. But what we do indubitably know is this: Knowledge itself is such, and all objects of knowledge are known to be such, that the conscious recognition of the ideas which differentiate their activities must somehow be assumed in order to explain them. And this fact cannot have its ground solely in our ideas of things; it must, the rather, have its ground in a reality that is not-ourselves. In a word, we know things only as *Some One's* "*actualized ideas.*"

Neither workaday experience, nor science, nor philosophy, can regard things and selves as wholly isolated or separate from one another. Every particular existence, whether it be of some Self or of some Thing, is known only as a part of the total system of selves and things. As what is remote becomes known by spectroscope and telescope, and what is minute by microscope and chemical analysis, this conception of common bonds uniting all particular beings with one vast, mysterious, but interrelated Whole, becomes more clear, more defensible, more exact, more confidently rational.

But all such progress toward a more perfect knowledge of the world, including man and his historical development, as a Unity of Reality, toward a comprehensive history of the Cosmos in any comprehensible meaning of such words, rests upon the same fundamental assumption. The mind is always dealing with a progressive and interrelated system of actualized ideas. And the more it becomes inclined to insist upon the absolute and "uncreate" nature of the totality, the more necessary the assumption becomes. Granted, then, that,

given matter and force, some "I," some Self, could construct the world. This could never take place unless the Will of such a Self could express itself in the matter and force for the actualization of its own ideas. If the Whole is to be understood as self-contained and absolute, this does not exclude, but the rather, of necessity, *includes* the immanency in that Whole of the requisite formative and differentiating ideas.

Thus far we have been speaking chiefly of the "actualization of *ideas*." But *ideals* are somewhat other and more than ideas — especially when the ideals are considered as set into reality. Considered as occurrences in some stream of consciousness, ideals are essentially like all other ideas. Viewed psychologically, they are products of imagination and thought; and they may powerfully excite and efficiently guide the will of the man who has them. Thus any man may, in a limited manner at least, actualize his ideals. By an ideal, however, is customarily meant an idea which sustains a different and peculiar relation to actuality. Thus understood, an ideal is an idea of what "might be," or "should be," or "ought to be," as distinguished from an idea of what actually is. The peculiar spheres of the ideal are, therefore, supposed to be ethics, art, and religion; and the actualization of such ideals, so far as they admit of actualization at all, is to be found in conduct, in artistic endeavor, in the religious life. But it does not fall within the scope of this treatise to consider in detail such ideals as these, — their nature, origin, or means of realization.

The student of the theory of knowledge and of systematic metaphysics cannot fail to observe, however, that what men call their surest scientific cognitions, as well as the objects which men esteem most undoubtedly real, are not uninfluenced by human ideals. Indeed, the very conception of Nature, of a Cosmos, of one World of many beings that is constructed out of matter and force, is itself an ideal. It is an idea which, while it rests on a certain solid foundation of knowledge, nevertheless contains not a few thoughts and imaginings as

to what "might be," or "ought to be," although it is as yet not known "actually to be."[1] Science cherishes its own ideals. Without these ideals science would not be progressive; perhaps it would not exist at all. For human minds would not be spurred or allured on to its conquests; nor would the world of realities seem to meet and to reveal itself to these minds. Science, therefore, no matter how exact in its realism it may aim to be, is always outrunning its own cognitive ideas with the banner of its ideals in its hand. And the strain it thus puts upon imagination and thought, as well as the rewards which it receives from imagination and thought, are little inferior to those which belong to art and to religion.

Pre-eminently is the modern conception of Nature as an absolute and uncreate Whole, as a Cosmos that has been through countless millions of years in the process of building itself by changing combinations of matter and force, and has thus raised its own fabric to heights of ever greater complexity, beauty, and value, a vast and entrancing but unproved Ideal. Strictly speaking, science does not *know*, and it never will *know*, that the Reality corresponds to this conception. The conception itself is by no means purely scientific; it is largely the work of the artistic and religious soul of man. Were it not that, as a conception, it so feeds and delights the artistic and the religious aspirations and needs of human nature, we might well enough dismiss it as a *mere* ideal,—a fair fabric of a dreamer's mind. For the concrete realities and the actual occurrences of man's cognitive experience are, in no small number, difficult to harmonize with such an ideal. And science itself discovers more difficulties as its progress marks the solution of some of the older difficulties. It is far harder to-day, for example, to accept

[1] Compare the author's "Philosophy of Knowledge," chaps. xvi. and xvii.: "The Teleology of Knowledge;" and "Ethical and Æsthetical 'Momenta' of Knowledge."

unqualifiedly any scheme of evolution than it was when Darwin first set forth the evidence for his own peculiar scheme. It is far harder to-day to place on sound empirical data a complete theory of the conservation and correlation of energy than it was before the existence of so many mysterious and hitherto occult forms of energy (X-rays, etc.) was demonstrated.

The constitution and meaning of this community of all particular known existences is at no time wholly clear. We are pleased to call the world a Cosmos, an orderly and rational totality. The older scientific conception was that of a machine, such as physics can understand; then of a molecular and atomic mechanism; but the newer scientific conception corresponds rather to the biological ideal of an organism. Innumerable exceptions, which may rightly constitute objections, to this view may undoubtedly be noted in every department of scientific knowledge. And perhaps there is much — even the far greater part — of the World's Being which is never to be understood, or made object of cognition, by mortal man. Nevertheless, the confidence of man in this ideal construction of the totality of selves and things remains undiminished. Nay, it is rather being constantly confirmed. That this artistic and religious conception of the world is the true conception, and that the whole vast complex of things and selves, whether now known, or to be known, or forever undiscoverable by man, *is* a Unity of Reality, the metaphysical system we have been advocating would be the last to deny or contest; *for this conception assumes the actuality of the Ideal.*

It is commonly thought that the ethico-religious view of the world — its nature, origin, meaning, and destiny — makes wholly extraordinary demands on imagination and faith; it is, therefore, in some peculiar way a piece of anthropomorphic idealizing. This may well enough be emphatically denied. Anthropomorphic such a view certainly is; but it is not necessarily more so than is the current scientific view. Ethics,

æsthetics, and the philosophy of religion belong to the philosophy of the Ideal. But no one of these can be separated from its roots in the concrete realities of man's daily experience, whether with himself or with material things. On the other hand, the so-called scientific ideal of the world as a whole, of nature at large, is by no means wholly based, by strictly valid processes of reasoning, on indubitable cognitions of reality. But man, in the unity of his own being, progressively establishes a firmer grasp upon the great truth that this World as a Whole, this Nature written with an impressive capital, is to be understood only as it is the actualization, in time, of the Ideal.

The system of selves and of things, regarded as a total complex of all real existences and of all actual transactions within or between them, is the "actualization of the Ideal." That is to say, the Reality of It as a Whole, as a Unity of some sort, is known and is conceivable only as the actuality of One Will which differentiates its activities according to its own consciously recognized ideas. This system, thus considered as an independent and "uncreate" totality, is cognizable, or conceivable, only as an Absolute Self. In saying this we reaffirm the statement which was formerly made as the result of approaching the subject through a detailed criticism of the categories.

Two subordinate problems now require, in conclusion, a more careful consideration. These are, first, the problem involved in the application of the conception of consciousness (or of any derived or allied conceptions) to the World as a whole; and, second, the problem as to the more appropriate ways of conceiving those relations which exist between this Absolute Self and each one of the particular beings, or between this Absolute Self and the World regarded as a complex of such particular beings. The first of these problems may be briefly despatched in this connection; both because its answer has already been virtually given or assumed,

over and over again, and also because the more important phases of the answer involve the discussion of connected questions in ethics, æsthetics, and the philosophy of religion.

"To be conscious" cannot, as Lotze seems to affirm, be made the equivalent of "to be real;" if, under the conception of consciousness, we include every form and phase of it, and if we also disregard the different degrees and spheres of reality. Neither is it true, as Hegelism seems to assert, that conceptual thinking (*das greifende Denken*) is the equivalent of all, even of the highest reality. Psychologists need the word "consciousness" for the bare existence of psychic fact, whether such fact be the sensation just arisen above the threshold, or the most obscure form of pleasure-pain, nearly or quite void of cognitive content; or the forthputting of a simple and uni-motived deed of will. But to realize one's self by one's own cognitive ideas in the pursuit of one's chosen ends, — this is precisely what it is for a Self really and truly to be. And reversing this equation, in fidelity to all man's most indubitable experience, it is truth to say: There is no reality knowable or conceivable by man which has not, as its explanation and ground, the reality of a cognitive and self-active Will.

Let us not deceive ourselves at this point. It is indeed necessary to elevate consciousness above the grade of mere psychic fact in order to find in consciousness the guaranty and necessary characteristic of the presence of reality. There may be many conscious feelings which, considered as mere occurrences, do not signify the reality of existences corresponding to them, or even of those "streams of consciousness" in which, as psychic facts, the conscious feelings occur. But whatever is not both "*of*" and "*to*" some self-active will that is directed by conscious ideas, has no cognizable reality at all; and to affirm reality of it is to set up the ghost of an abstraction and worship the abstraction as an actualized ideal.

For, here again, the mind of man is not following a doubtful chain of argument which by a tedious and endless *regressus* takes it to seek refuge in the hypothesis of one original infinite, creative Mind. It is, the rather, interpreting, with fuller insight, whatever is about it on every hand, whatever is given to it in every perception of the senses and inference of intellect. It is "*minding*" its own *datum*. The *datum* is not a portion of "brute, inanimate matter," or a centre of mere forces, or a mathematical abstraction, or a contentless void. Its *datum* is a reality, self-active, ceaselessly forming itself in intelligible relations to other beings. Its *datum* is an actual Thing.

But every individual thing, as given to man to know, is but a pulse, a temporary throb, in the great life of Nature. In It, this thing and we who observe it "live and move and have our being." And when we give to ourselves and to things these unifying relations to one another and to a common ground, we speak in terms of our own higher self-consciousness, as being ourselves self-conscious wills that guide ourselves by consciously accepted ideals. Unless we transfer to nature the meaning which our self-conscious and active, cognitive life imparts to our words, the words themselves are meaningless. Reality that is not grounded in conscious life, or that is not the expression of that life, is no reality, is nought, is not. And there is no trick shabbier, whether employed by science or by philosophy, than to use the terms of such consciousness, apply them to particular things or to the World as a Whole, and then deny the essential import of both terms and their application.

"Soul is vastly larger than consciousness," says a recent writer[1] on the "early Sense of Self," and "the highest powers are those that spring from roots that start deepest down in the scale of life. Consciousness is as different from mind as

[1] See a pamphlet on "Some Aspects of the Early Sense of Self," by G. Stanley Hall.

froth is from beer, and the syllabub of some of its exploiters and promoters suggests the mediæval barber's apprenticeship, which ended when the tyro could make two tierces of foam from two ounces of soap." This is true if it be meant to deny that merely to seem to another to be a sort of centre for the occurrence of psychic facts, bare "consciousness, as such," is not enough to constitute the substance of a real Self. But if it be meant that consciousness in general is to the reality of the Self, or to all Reality, as "froth to beer," then nothing further from the profoundest truth of philosophy than this can possibly be said.

The categories themselves are the essential and unchanging forms of cognitive *consciousness;* and they are the necessary forms of all known *reality* as well. Therefore, we do not have to rise up from reality, or stoop down to reality, in order to find consciousness. Those forms of the actual, without which no Self and no Thing can be, are all forms of Will directed and determined by ideas. So that the progress of human thought is not from the conscious, as a secondary product, or mere advent, to the unconscious as its source or ground. Neither — we repeat it once again — is the progress of human thought a chain of argument from that which is now unconscious, back to the conscious in some far-off space and remote time. But the movement of reflective thinking is from the phenomenon as it appears, a conscious process in us, to the reality which is our own self-conscious life; and this same movement of reflective thinking becomes the valid but indirect recognition of that One Reality of whose self-conscious Life both the thing and our self is the manifestation.

CHAPTER XIX

THE WORLD AND THE ABSOLUTE

ANY attempt to specify *relations* as existing in reality between the world and the Absolute, or (to use the language of religious faith) between the world and God, brings upon the student of systematic metaphysics some of his most difficult problems. But the difficulty which attaches itself to the solution, and even to the discussion, of these problems is not chiefly speculative. If one felt at liberty to argue the case quite irrespective of ethical and religious considerations, one might hope at least to attain a fair amount of consistency in one's opinions, of solidarity in one's system. But to embody in a theory of reality those distinctions which seem to separate the concrete and manifold existences from the Absolute One, is apt to result either in the conception of a world that is devoid of reality, or in the conception of an Absolute that lacks just those characteristics which "absoluteness" necessarily requires. While to identify throughout the world and the Absolute too often results in the complete destruction of the most valuable conceptions entertained by men in the interests of morals and religion.

The history of metaphysical systems shows how often they have divided themselves over the question: What are those relations, in reality, which the world sustains to the Absolute? This same history also shows that the discussion of the question has been accompanied by not a few charges, often acrimonious, against the consequences for conduct and faith which seemed to flow from these different answers.

Pantheism, and a materialistic or an idealistic Monism, has generally been accused by Dualism (whether of the so-called "common-sense" or the philosophic variety) of depreciating the practical interests of mankind. But Dualism has never been able to establish any such conception of the Absolute, or of God as the World-Ground, as would afford a lasting satisfaction to the undeniable speculative interests of humanity. In general, those systems of metaphysics which have set a high value on consistency of thinking and on a certain solidarity of speculative conclusions, have espoused a doctrine of the Absolute which appeared to minimize or to destroy the reality of the world of finite selves and finite things. But those systems which have exhibited most tenderness in dealing speculatively with particular existences, have been comparatively lax and unsatisfactory in their doctrine of the Absolute as the alone World-Ground.

Of late there has arisen an increased insistence on the value, for philosophy, of the permanent emotional and practical considerations. This is, partly, a reaction from the extravagant claims of modern science to furnish all that man needs for the deepest satisfaction of his intellectual curiosity and his practical necessities. It is also, partly, in antagonism to those systems of philosophical Absolutism which satisfied temporarily, but which have already ceased to satisfy. Among them undoubtedly the system of Hegel is most prominent. This attempt at an emotional and practical philosophy is directly born of the agnosticism which followed the Kantian Critique; although it often expresses scanty respect for — as it generally knows little of — the meaning of this Critique. Its proposal is thus expressed: "Let us select such few principles of philosophy as best satisfy human feelings and afford the best helps in the life of human conduct; the others may go, for they are vain logomachies of mere speculators in metaphysics and theology." To serve as a rallying cry for a new party, as though this

metaphysical subterfuge were some nineteenth-century discovery, this proposal is called the "philosophy of Pragmatism," or by some other similar name. To the man of insight it is, however, perfectly clear that this recent attempt is only one among many attempts so to conceive of the relations of finite beings and the Absolute, as to save the ethical and religious concernments involved. So far forth the "philosophy of Pragmatism" is commendable. But inasmuch as this particular proposal lies along the line of getting the largest result from the least amount of reflective thinking, we may well hesitate about calling it philosophy at all. *Philosophy* — yes, even metaphysics — is genial and sympathetic; and it may be most tender in its treatment of moral and religious issues. But it seeks the true and the self-consistent. Its method is not that of syncretism. Its issue is not determined when it has pleased men with picturesqueness of imagination and abundance of good feeling; neither does it mistake rhetoric for philosophizing.

There are certain preliminary considerations drawn from the number of those already discussed, whose bearing upon the problem of this chapter is most important. They are chiefly the following four: First, every stage and every form of human knowledge — including that which seems most purely dialectical or philosophic — is dependent upon impulses and activities of an emotional and voluntary order. No scientific cognition is free from these impulses; what is called "science" is never a merely intellectual achievement, never an affair of "pure" reasoning from grounds of unbiased observation by the senses. Knowledge always involves an emotional and active attitude of the entire self toward its object. What the philosopher knows, or thinks he knows, about the Absolute and about its relations to the complex of particular existences, is necessarily and rightly influenced by ethical, æsthetical, and religious feelings and practical necessities. This influence, however, does not contribute to the

exclusion of thinking — as thorough, penetrating, and consistent as thinking can possibly be made. For if mere thinking is not knowledge, neither is mere feeling, however noble, nor mere "will to believe," however well intentioned.

Second: metaphysics is obligated to spend all its constructive resources upon the problem of the relations of the world and the Absolute. At this problem it must work diligently and continuously, in the interests of increased clearness, comprehensiveness, and self-consistency. The philosopher can no more properly relinquish his claim upon this than upon any other important right; he can no more creditably refuse to discharge this than any other of his most essential obligations. But what is this metaphysics that undertakes to arbitrate a dispute over so difficult problems? It is only, when finished and at its best, a "*theory* of reality." Like any other theory it must submit to be tested by the facts of cognitive experience. Now we *know* that we ourselves do really exist, that other selves really exist, and that non-self-like things exist. All man's knowledge starts from the same roots in his experience with actual selves and actual things. We know also that man is an ethical and religious being (if the words "ethical" and "religious" be defined in accordance with the facts); and that some sort of reality, freedom, and scope for hopes, fears, aspiration, etc., toward those ideals with which the philosophy of conduct and of religion deals, must be admitted as belonging among the plainest facts of man's historical development. Metaphysics as a system, as a theory of reality, cannot deny such facts without destroying part of its own foundations in actuality. System is not true, if it leaves these facts out of its account; or if it misrepresents and misinterprets these facts.

Third: the very use of the words, the world and the Absolute, or the world and God, necessarily implies a duality of conceptions. The World *and* the Absolute, the World *and* God, — the very proposal to argue as to the more precise

meaning of this terminology, implies some sort of relatedness between two conceptions. Even if the conclusion of the argument be some scheme to identify the two throughout, — the affirmation that the world *is* the Absolute, *is* God, — we do not escape the use of the category of relation. The world = the Absolute; $a+b+c+d \ldots \infty = X$, is an *equation*; and the idea of an "equation" is a relation. Or if it be concluded that these two are only different *aspects* of the One Reality, different ways of expressing essentially the same truth, still the mind is obliged to consider how these "aspects" (these "ways of regarding and expressing") themselves stand related.

And, fourth, under the term Absolute we cannot understand, much less conceive of, the absolutely "Unrelated." Neither knowledge, nor imagination, nor thought, nor envisagement of any kind, can present the mind of man with that which is out of all relations. The path to such being lies neither through mental representation, nor "intellectual intuition," nor vague emotion, nor dialectical process, nor inference. Conjecture and logic, fancy and faith, are equally impotent here. Neither is the Absolute to be brought before the mind as the Unrelated, in the form of a so-called "negative conception." For even to negate is to relate, and negation is itself a relation; nay, it is often a complex of more or less important relating judgments, all of which have a positive content of definite relations.

If by "the Absolute" it is meant to cover a unity which has *no* relations outside of its "self," — as is sometimes so significantly said; even then, and all the more emphatically, the mind is dwelling upon certain internal relations that define in terms of experience the absoluteness of the Being to which the word must be applied. Could this conception be so reduced as to make it the equivalent of Nought; even then the mind would not be conceiving of the Unrelated, in a merely negative fashion. For "nought" is related to any

particular one, or to the sum-total of particulars, as its opposite, as that which is *not* what the other is. Nought itself is not conceived of as the absolutely unrelated. The swelling of vague feeling, the stirring of inchoate apprehensions, and even the sensuous appreciation of merely physiological changes, which is produced in some minds by this word when writ large and begun with a capital, are all forms of the being in relation to us of that for which the word is made to stand. Mere size has nothing to do with the solution of the problem of the nature and relations of Absolute Being.

> "A sphere is but a sphere;
> Small, Great, are merely terms we bandy here;
> Since to the spirits' absoluteness all
> Are like."

Any theory of reality which grasps firmly and holds consistently to these four propositions will find the task of outlining the relations of the world and the Absolute by no means hopeless from the start. It is indeed a task which cannot be accomplished even to the temporary satisfaction of the individual thinker, without invoking the manifold helps of ethics, æsthetics, and religion. For the ethical character, and the artistic skill, and the loving sovereignty of the Absolute, are *in* the world of particular existences, because of the relations in which the Absolute eternally stands to this world. And when men get the clearer light upon these relations, and so the deeper and finer insight into the nature of the Absolute, they call Him God, and worship and serve Him as their Divine Redeemer and Friend. This is because they then know the Absolute as so related to all selves and to all things that He is the inspirer, the source and the type of all that is really good, in conduct, art, and religion. The relation of the Absolute to the world is then recognized as that of the holy, all-beautiful, and all-worshipful One to the multitude of particular beings who have their life and their reality only as being "in Him."

While speculative philosophy cannot fill out, with such richness of content and practical helpfulness, the conception of the Absolute, it can have something to say that does not leave this conception in the "death-kingdom" of mere abstractions. The Absolute is, indeed, known to the most profound of metaphysicians only as "in" the world and as "related to" the world. For the speculative thinking of the philosopher, as truly as for the "plain man's consciousness," the World-Ground can never be identified with the Unrelated.

It will be the purpose of this closing chapter of a theory of reality that is not complete in itself but that only lays the foundations upon which ethics, art, and religion, may build their superstructure, briefly to define its fundamental position respecting the relations of the Absolute and the World. Its position, in a word, is this: all the relations that exist amongst the particular existences of the world have their Ground in the Being of the Absolute; and all these relations are but concrete and particular instances of that all-embracing relation in which the Absolute stands to the world as being its Ground. There are no relations conceivable, or possible, that do not have their sources and the guaranty of their actuality in the Absolute; and this eternal and unchangeable relation to the world includes and explains all particular relations.

In illustrating this view, however, no one of the four truths which have already been stated must be left out of the account. The reality of the world, considered as a complex of actually existing selves and things, must not be denied or minimized. The actuality of the relations, or terms of relating, under which human knowledge brings together this world and its absolute Ground, must also be held in good faith. Never for an instant must the thinker deceive himself by trying mentally to represent the Absolute as the equivalent of the absolutely "Unrelated." And, in the work of elaborating theory, the interests of ethical and religious emotions and practical needs must not be left unsatisfied.

Theoretical views as to the relations of finite beings to the Absolute commonly err in one of two directions. They give meanings to the terms they employ for summarizing these relations which do not agree well with the conclusions of a critical and sympathetic analysis of the categories; or they assume, by employing some one or more of such terms, to exhaust the entire content of the complete philosophical doctrine of these relations. Thus, on the one hand, their use of words does not correspond to the true and ultimate values of the words themselves, as these values are determined by metaphysical criticism and as they have their proper place in metaphysical system; or on the other hand, the conclusions they reach, while true so long as they are held to be incomplete and partial, become false when considered as complete and all inclusive.

Suppose, for example, that the relation between the totality of finite existences and the Absolute is resolved into identity, or into some form of emanation. The complex of known and knowable particular beings is made indistinguishable from the Absolute; the many, regarded collectively as the All, is self-same with the One. The World *is* the Absolute; and by the Absolute we mean the All-One. This is what is generally understood by pantheism, in its simplest and crudest form. Or, again, the complex of known and knowable beings *emanates*, either as a timeless procedure or throughout unending time, from the Absolute, its Ground. The process of becoming which the world exhibits to us is a sort of necessary "drawing forth" of particular beings from the inscrutable but universal source of them all. Being in general, by a mechanical process, becomes particular beings, etc. Now customarily both these, and all similar views, show a complete lack of lucidity and speculative value, while they make sad havoc with practical interests, unless the conceptions fundamental to them have been critically examined and accurately defined. What is meant by "identity," or "emanation," as specifying

relations that actually exist between the world and the Absolute? The answer to this and to all similar questions, can be satisfactory only when the search for it has taken us back to the criticism of the categories.

To restate the conclusion to which the valid necessities of metaphysical system seem to impel reflective thinking: All the fundamental relations which man's cognitive experience recognizes as existing between the different beings — selves and things — of the world have their Ground in the Absolute; they only serve the more fully to define and enrich the conception of that manifold of relations in which all beings stand to Him. For He is not the Unrelated, but the source, the guaranty, the actuality of all relations. This general position, with its affirmations and its cautions, we may now illustrate as applied to certain selected instances. These instances will be taken from three main classes of relations.

The most fundamental and comprehensive of all is that relation — or, perhaps, it ought rather to be said, that complex of relations — which exists between the knowing subject and his object, between the knower and what is known. This relation it is whose fulfilment unites cognition and reality in a living oneness of experience; or — better said — this relation is cognition considered as an actual commerce between realities that are "moments" of one Reality.[1] All particular instances of this peculiar relation of subject and object in knowledge have their source and final explanation in the being and activity of the Absolute; and the relation between the universal complex of things and selves, on the one hand, and the Absolute, on the other hand, is the relation of the knowing subject to his object. To say, God is omniscient — he perfectly knows all things, and all selves, and all transactions within or between them — is to affirm that the

[1] Compare the conclusions to which the author comes in the later chapters of the "Philosophy of Knowledge."

world is actually in relation to the Absolute Subject as his object.

The truth that all beings, their relations, and their transactions, are objects for the Absolute as subject, is not a matter merely of theological speculation or of purely religious faith; it follows indisputably just so soon as we understand those implicates concerning the constitution and regular modes of the behavior of Reality which metaphysical criticism detects and explains. For we have seen that such criticism establishes the conception of the world as self-explanatory, so to speak, only when it affirms the selfhood of the world. No single real thing, and no actual individual self can become an object of knowledge except in so far as it is able to make the knower recognize in it, too, the fundamental characteristics of selfhood. It is as centres of an activity which is self-differentiating in ideal forms and in the pursuit of ideal ends, that things become objects of knowledge for us. If now the distinction is made real between the mere complex of all objects of knowledge and that unifying principle which makes them all something quite other than a *mere* complex, the world must be regarded as standing in the relation of objects to this principle, the one Subject for them all. Or, in other words, a real unity, embracing all known and knowable objects, can be maintained only in the cognitive consciousness of the Being for whom, as subject, the particular realities are the objects.

If now one wishes to raise the conception of the relation of object and subject, as really existing between the world and the Absolute, to its highest terms, this result can be achieved in only one way. The perfection of the conception of such a relation is realized in that most complete grasp which the knowing Self has upon the here-and-now being of its own self. "The knowledge of things remains (for us) an analogical interpretation of their apparent behavior into terms of a real nature corresponding, in important characteristics, to

our own." But "the knowledge of Self may attain an intuitive penetration to the heart of Reality." Therefore this "immediate knowledge of the Self by itself is, in actuality, the realized ideal of knowledge." Nor can the Absolute sustain to all finite beings those relations which its own conception demands of it, unless it be conceived of as realizing — eternally and perfectly — such an ideal of knowledge.

It is customary for those who take the lower and unphilosophical point of view to regard this vast universe, with all its beings and the innumerable transactions and changing relations amongst them, as an "object" indeed, but as an object that is conceivably separable from the reality of any conscious subject, whose object it is. Thus the student of nature transports himself through countless ages of time to some lofty point of view from which to survey the construction of the greater Whole; or he imagines what an unlimited increase of "interiorness" and penetrating insight would show to him concerning the hidden constitution of particular things. So and so it all went on, when as yet no conscious mind existed; when matter was wholly "brute and inanimate;" when the eternal atoms were just stirring themselves for their everlasting task of building all things as man knows them now to have been evolved in the past. *This* world *is*, — although in embryo, to be sure; but it is no object for a subject, because It has not yet given birth to a subject; the dawn of subjectivity out of the objective chaos is yet to come. Only the bare Being of Matter and Force is assumed to be "on hand;" only actual crude "stuff" and abstract forms and laws are as yet real. But they are going henceforth, without any assistance from ideas, to make a world in which ideating beings shall finally come to exist. And of these, the observer is one, whose ideas, or purely subjective processes, have arrived at the power to represent in consciousness the true objective procedure of the self-building World. This, however, is absurd.

Who can deny, however, that the picture which the well-equipped student of nature draws, with most profuse use of the written or spoken word, is itself the object of his own thinking, feeling, willing Self? *This* picture, surely, has its only reality in being object for him as its subject; when it ceases to be as the construct of its particular subject, it ceases from being actual at all. But the world that is not identical in existence *with* the picture, and *of* which the picture is assumed to be representative, does not thus come into being and pass away in dependence upon this individual subject. What existence can it have, however, that is knowable or conceivable, in complete independence of a cognitive mind? The pictures which some other mind, in the present scientific age, draws of this same world, or the pictures which the students of nature will be able to draw in the far-off future when natural science is greatly increased, are in like manner dependent for their existence — each one — upon some subject-Self. But what is the bond that unites the true factors of all the separate transitory pictures of the world, and thus constructs a possible knowledge of the world that is completely and absolutely true? There can be no such bond except the activity of the Absolute, considered as standing to the world in the relation of a knowing Subject for which all the particular real beings and actual transactions are the object.

In vain does the mind attempt to escape this conclusion by regarding the world that really was before it became the object of some cognitive subject, as mere Unity of Force or blind Will (after the fashion of Mr. Spencer or of Schopenhauer). For the entire course of our past argument has shown that Reality can neither be conceived of, nor can actually be, *mere* Force or *mere* Will, formless and helpless, because possessing no principles of self-differentiating as essential to its own actualizing. Moreover, a Unity of Reality, even when conceived of in the most meagre of terms, is still actualized only as object for some subject. A known or con-

ceivable world, cannot exist as a total Real, except as the object of an Absolute Subject, an omniscient mind.

The Absolute, then, is related to all finite beings as the subject is related to the immediate object of its cognitive consciousness. If one chooses to retain terms that are meaningless unless translated into conscious experiences one may say: The World, considered as Absolute, stands to the World considered as a mere complex of individual existences, in the relation of an omniscient subject to its total object. But translated into the language of experience this means; God knows all that is, and is done, in the world, as the Self knows its own being, here and now present to itself. In a word, the doctrine of the Divine omniscience, as applied to the totality of actual existences, follows from the doctrine of the true nature of knowledge and from the valid theory of reality as established by a criticism of the categories. But that class of relations which may be summarized by the terms, subject and object, does not exhaust the conception of relations as actually existing between the world and the Absolute.

And when the metaphysician limits his ontology to the discussion of the tenet, that the complex of concrete and particular existences has its reality in the cognitive consciousness of the World-Ground, no matter how skilfully or comprehensively he frames this tenet, he is sure to controvert important facts and principles which are deeply rooted in man's experience with himself. No reality is fully described or exhaustively defined, as existing solely under the relation of knowing subject to object known. The very terms, subjective and objective, afford only the barest frame work for actualizing those manifold relations in which I stand to myself and to the rest of the world. This framework requires to be filled in with all the concrete conditions of actuality, with which compliance must be had in order to win a just claim to a place in the ranks of the realities.

The world is related to the Absolute as particular realities are related to the One Reality which is their common Ground. The relation of the phenomenon to the actuality whose phenomenon, or manifestation, it is, furnishes warrant only for so much of truth as there is in the doctrine of Mâya. If the mind dwells on this relation as a truth, it is impressed with the illusory and transitory nature of all things and of all souls. They and we are alike appearances — phenomena. To ourselves, we and they *seem* but as matters of a day. Each individual existence is cloud, smoke, vapor, that "appeareth for a little time and then vanisheth away." So the Self betimes appears to itself; and this *is* the manifestation, in one set of its real aspects, of his own being to every thoughtful man. But "of" what is this manifestation? It is *of* the Self, as well as *to* the Self. It is one of my ways of making my reality known to itself. As we have seen (chap. ii.) the actuality of the Self is implied in the appearance as indubitably as is its phenomenal character. Thus, too, the whole complex of selves and things may be regarded as a gross sum of appearances; the world is smoke and vapor and cloud — a succession of phantoms in a purely subjective space and time. And "we are moving shadow shapes." Yes, this is one real aspect of the world, to which it pleases thought at times to direct attention. It has its own value and its own truth. But again the question returns: *Of* what Reality is this world of appearances the phenomenon? To say: "It is mere phenomenon, bare, ungrounded and uncaused succession of appearances," involves the mind in such absurdity that its degree cannot be measured in words, or stated otherwise than in terms which confute it. The world must, then, be considered as the succession of appearances, or of phenomena, whose actuality is the eternal Being of the Absolute.

It is the actuality of this relation between individual existences, considered as manifestations, and the Absolute considered as their real Ground, which gives to ethics, to art, and to religion

much of their appropriate terminology. Conscience is "the voice" of God. The beauties and grandeur of nature evince a Divine beauty and sublimity. Manifestation, revelation, the "appearance" of Deity in some specific form, are conceptions which grow out of the roots of this genuine and thoroughly philosophic as well as universally human idea. The Absolute is the hidden, the unmanifested One; and philosophy has made the vain attempt to consider Him as the "Unrelated." But now, on the contrary, all things and all selves, in their mutual relations and historic progress, are significant of that wealth of relations in which the Absolute stands to all the phenomenally real. The world — in the most comprehensive possible use of that word — is God's appearance, his self-revelation, his "phenomenon."

And to all particular processes of change, as well as to the specific principles of becoming which, as men figuratively say, "rule over" these processes, the Absolute stands in the relation of the One Principle, or Source, of all Becoming. In discussing the category of change (chap. vi.) it was seen that unprincipled and unregulated change — *mere* change — cannot afford any account of the being and development of the system of minds and things. The very claim to reality, made by any particular mind or thing, implies that the changes which it undergoes are under the control of principles of becoming. So that it is impossible to speak of the world as a vast collection of unrelated and unsystematized changes, or of its history as a mere succession of changing states that happen without reference to any principles of change. What the mind of man knows as the result of growth in experience, and more specifically and comprehensively as the result of the advance of science, is this: *Things change in a mutually determining way.* Looked at as a passivity or receptivity in things, they may be said to obey the laws of the various becomings which are induced in them. Looked at as an activity or endeavor of things, they may be said to be always reach-

ing out after new — and perhaps, in most cases, improved — forms of manifesting what they are, and what they can do. But looked at as both passive and active, the totality of things constitutes a world of changes, a sort of system of becomings; so that we may indicate, however imperfectly and dimly, an important truth of fact by saying: "The World is becoming thus and so;" or "the World is changing in the direction of this or that idea, which sets to its course of changes a sort of goal."

This idea of a system of changes, or becomings, which falls under a relatively few fundamental laws, or supreme controlling principles, is the essential factor in the modern doctrine of evolution. It is so, whether that doctrine take the more definitively scientific shape — as, for example, in biological evolution — or be more speculatively constructed as a comprehensive philosophical tenet. Darwin and Spencer, Weissmann and Schopenhauer, alike aim at the discovery of the unchanging principles of all changes, the absolutes that are in relation to the becomings, as giving to the different forms of becoming their inciting and inhibiting ideas. But when the thought of man has reached the heights of pride and ambition necessary for the attempt to comprehend the Source of all these principles in the Being of the World, then the category of identity can by no means be made to fill the place of the category of relation. *Mere* processes of becoming, as such, however few in number and widely distributed over the realm of minds and things, do not afford an explanation of themselves. They are still only descriptive history or romantic story of the order of the phenomena; they constitute neither a true cognition, nor a defensible theory, of Reality. The principles of becoming must, indeed, belong to the beings that undergo the processes of becoming; for principles are not themselves entities foreign to the realities which recognize and observe the principles. But when all changes are referred in thought to a Unity of Reality, all becomings to some one

Principle that determines them all, the conception of this Unity, of this one Principle, is given an absoluteness which does not belong to the changes, as such.

In other words, all evolutionary theory conceives of the world and the Absolute as standing in the relations of a vast complex of coexistent and successive changes to a Ground that somehow decides what these changes shall be, but does not Itself change. All the becomings, taken in their relations to each other of time, space, and causation = a world that is becoming, — a system of minds and things that are connected together in a process of development. The principle of all these becomings, considered as the ideal source of them all, and as giving the laws and forms, and setting the goals, for them all = the unchanging Absolute. This Absolute, then, stands to the world in the fixed relation of an ideal Principle of Becoming to all the particular changes which take place, however caused when regarded from the scientific point of view, in all space, and throughout all time.

What sort of a real being the Absolute must be, in order to constitute the sole, ultimate principle of becoming, has been made clear by all our previous discussion. Only an Absolute Self, whose essential and unchanging characteristics are those of a rational and free Spirit, can fulfil the required conditions. When, then, the evolution of all particular beings, minds and things, is referred to this Spirit as its Ground, it is not meant that the Absolute is either identical throughout with the sum-total of the processes of change, or that the Absolute is itself undergoing a process of becoming. What *is* most fitly meant cannot be discussed in detail without appeal to the facts and principles of ethics, æsthetics and religion. But the conception afforded by our theory of reality shows how God may be at the same time neither separate from the world, as though he had left it to itself, nor identified with the world considered merely as a system and unending course of changes.

The advocate of that form of metaphysics which is called

"common-sense dualism," or "physical realism," is apt at this point to interpose an objection. To regard the Absolute, he says, as "manifested" in all the complex of finite spirits and things, or as standing to this complex in the ideal relation of a "principle" of becoming, tends to render the world ghostly and unreal. On the contrary, as tested by the standards of cognitive experience, the Absolute is to be considered as a "manifestation" of finite spirit, a "phenomenon" of human development, a process of ideation and abstraction within the consciousness of the individual man. There is truth on the side of this objection, so long as these terms — "manifestation," "phenomenon," and "revelation," or the like — are held, even seemingly, to exhaust the content of the relations of the totality of finite beings and the Absolute. But the essential point in the theory of reality we are maintaining is precisely this: — All relations have their Ground in the Unity of Reality, whose name, for religion, is "Almighty God." *Just as relation must itself be considered as the "mother" of all the categories, so the Reality which is known under the terms of all these categories is the source and the actualization of all the fundamental relations covered by the categories.*

It is through terms expressive of "force," "causation," etc., that the actuality which seems lacking to the more obviously ideal forms of relation is given back to the world of finite spirits and finite things. It is as "centres of force," and as being themselves capable of exercising causative influences upon each other and of standing in causal relations, that finite spirits and finite things are considered real. When things are conceived of as *only* manifestations of an underlying or an over-ruling reality, they appear to have only an ideal existence. Finite spirits and finite things evince their reality by doing something to each other, according to the amount and kind of force which is in them, and under those observed formulas, or laws, which describe the ideal terms on which the doing takes place.

So, too, can the Absolute himself vindicate a claim to reality and establish a clear title to be somewhat more than a conception, only by an exercise of force, only by being a source and a principle of all causal relations. The relations of the Absolute to the world must be actualized in terms of force; the One Cause must interpenetrate and make real all so-named "causal" relations. This is what philosophy interprets modern science to mean when it regards the various forms of the conservation and correlation of energy as appertaining to one Force. This is what philosophy understands science to assert when it declares the *quantum* of this energy to be unchanging. The different, otherwise separate, and otherwise unreal existences are thus bound together into an actual, as distinguished from a merely conceptual, unity; for they share together in the bountiful distribution of this one Force.

Indeed, even the ghostliest and most abstract terms which thought can employ to designate hypothetical relations amongst things have any significance only as they hint at the realization of man's ideas of force and of causation. No thing can enter into any relation with another thing, or have any relation entered into with itself by other things, except in so far as it is the possessor and the distributor of force, the partner in a causal transaction. In believing this, the mind is not juggling with its own terms. Even the most obscure and evanescent manifestation implies both the energy to make it, and the energy to react upon it. Only forces can be the responsible sources of phenomena. In truth, the relation between the thing and its manifestation, between the actuality and the phenomenon, is the most original and typical instance of the causal relation. The essence of causation is the relation of appearances to "that-which" is real. In reality, no phenomenon causes, or accounts for, another phenomenon, — both being considered as mere phenomena; it is always reality that energizes to produce its own appropriate

phenomenon. The source of the causal relation is in the mutually inciting and reciprocally limiting activity of things.

But no individual being is possessed of inhibited, unrelated, or unlimited, force; neither soul nor thing is a cause of any change, not even of its own most peculiar and distinguishing phenomenon, in a perfect independence of all other souls and things. All manifestations of energy in mind and in matter are relative and dependent. They sustain inescapable relations to the constitution of the being whose energy they manifest; and this constitution is itself a child of nature, — a derived being, dependent upon relations and activities whose existence and exercise lie beyond any particular being's control. Give and take, act and be acted upon; — this is the law for all concrete and individual existences. Thus they actually are, — relatively independent and yet absolutely dependent; they are self-centred only so long as they both continue to act from this centre and also to find this centre reacted upon. "Have thy force in thyself, at thy own command; be really a force" — such is the hortation which proceeds from the very nature of the Absolute Himself. But this hortation can in no wise abrogate the truth that in the same Absolute, we and all things "live, move, and have our being."

Considered, then, as relatively independent existences, all selves and things have only a being derived from, and dependent upon, the Absolute Being of God. All their reality is related to Him, who is the alone absolute Reality, as to its source or ground. All the forces which they exercise, and of which they seem to be possessed, are dependently related to the one inexhaustible source of energy; to the Being of the Absolute regarded as omnipotent Will. Every individual display of energy, however originating in that complex of changes which is known as the actual history of the world, has this twofold character: it is at the same time an energy of the things concerned, and so to be classified as H (heat),

or E (electricity) or M (magnetism), as having the quantity x, or y, and as due to a concurrence of relating circumstances comprised under the formulas m or n; but it is also the ever-present energy of the Absolute, to which all the forms of energy known by the particular sciences are dependently related, as having in IT alone their source and their ground. When the thing acts, God acts. Where the energies stored in the different portions of matter are, there is the immanent and omnipotent Will of God.

Nor can the being and self-activity of particular selves be considered as otherwise related to the Being and Will of the Absolute. We, too, have life, motion, and being, "in Him." Even when I will to assert my independence of the compelling power of my physical environment, or — if you please — to resist and to defy the power of the Almighty, this assertive, resisting, and defiant will of mine is not for an instant able to render itself independent of its source. The source of my will-power is the source of all power; it is the Will of the Absolute.

How, then — it is asked with commendable eagerness — can the freedom and true personality of man be maintained in such a way as to conserve the inseparable and invaluable interests of ethics and of religion? The question is pertinent and important. No theory of reality which does not provide positively for its satisfactory answer, or at least refrain from making such an answer impossible, can long stand the test of man's inclusive experience. For the facts on which the interests of ethics and religion repose are as undoubted and as significant as are any of the facts affirmed by experience. In truth, there is no small reason for the belief that knowledge itself reaches the fulfilment of its own highest significance as a means to right conduct and to the life of religious faith and devotion. That knowledge cannot be attained, or critically considered, without emphasizing its own quasi-ethical constituents and implications, we have elsewhere shown with sufficient detail.

The problem of the relations sustained by the human will, to the will of the Absolute, does, indeed, belong more specifically to the philosophy of ethics and of religion. It cannot be satisfactorily discussed by general metaphysics, as a part of the analytic, critical, and systematic treatment of the categories. Metaphysics, however, has a certain preparatory work to accomplish with reference to the later treatment of this problem. Two or three of its principal points of view may properly be emphasized here: And, first, it is the forms, laws, and ideal ends, of any particular existence which define the more precise nature of the relations sustained by each such existence to that Absolute Being in whom they all have their ground. Dependent on Him ceaselessly and without exception, all beings actually are; but different beings actualize in far different ways their general relation of dependence. The forms, laws and ideal ends realized by the dependence of human selves upon the Absolute Self are, in fact, far different from the forms, laws, and ideal ends of the lower animals, or of material things. Here theory cannot controvert facts; here it is pre-eminently necessary that theory should be based upon facts. The formal conditions of man's relations to God and to the external world are *not* the same as those which control the relations of things to one another and to God. The laws of the human psychical life are *not* a mere repetition of physical laws or of the laws of the psychical life of the lower animals. And men *do* select for themselves, and *do* actually follow, ideal ends that never appear in the consciousness of the lower animals, and are never obviously served by the behavior of things. In the case of man pre-eminently and perhaps also in the case of the lower animals, each individual in the species attains a position in reality which is dependent upon its own will; — and in the case of man, "will" means a more or less highly developed power of choosing his own forms, laws, and final purposes. Thus man reaches a high degree of relative independence, a sphere — or, if you will, an

amount, of reality — which belongs to him alone among all known finite existences. But this does not take the human species, or the individual man out of the system of finite beings; nor does it for a moment break the thread which ties him in dependence to the Will of the Absolute.

Second, there is not necessarily any more contradiction involved in this so-called "double aspect" of the relations of man to God, than is involved in the consideration of all particular existences from both the scientific and the ultimate, or metaphysical, points of view. Two of H unite with one of O to form the compound H_2O "*because of*" the laws of chemical affinity and "*because of*" the relations into which the H and O are brought by the compelling forces of their environment, — temperature, pressure, induced molecular activities, etc. But the chemical is not the entire explanation of such a transaction in reality. Really, H_2 and O come together in this way, because "it is their nature to;" the ultimate explanation takes into the account the mysterious being of these elements as a primary postulate, a precondition of all the forms and laws of their reciprocal behaviors. Now, from philosophy's point of view this is essentially no other than the position: H and O behave in this way because it is the Will of the Absolute that they should so behave. Metaphysics cannot consider the "nature of things" as something bestowed upon them, in the lump and once for all as it were. Thus is all scientific cognition forced virtually to acknowledge a mysterious metaphysical aspect of things, a primal and original being which they have, in immediate dependence upon the All-Being whose will they express. Whether any fitting terms can be found to express these two aspects of the activity of human wills without destroying either the truths of fact or the truth of metaphysical theory, remains to be seen. But should we be forced to accept both aspects, and yet continue to regard the details of a reconciliation as hidden among the mysteries of Absolute Being, the way of God's will with the will of man

would not be the only ultimate mystery. The way of our own wills we know, within certain limits, most clearly and indubitably. This it is the business of psychology and of the philosophy of ethics to expound. The general relation of the Will of God to this our will follows from the most primary and necessary tenets of systematic metaphysics. But the particular forms, laws, and final purposes, of this relation afford a complex problem which must be approached from many points of view, and the complete solution of which may baffle man's inquiries forever. To regard God as sometimes compelling, sometimes openly persuading or alluring, sometimes directing by special revelations, and sometimes "leaving man to himself" is to employ figures of speech that are not without much to commend them in all human experience.

It is these relations of force and causation sustained by manifold particular existences to absolute and supreme Being, that religion has emphasized in various ways. Thus, in its cruder forms it has regarded the gods as puissant centres of more than ordinary effective and wide-spreading forces, on whose action the well-being of man and the phenomena of nature are dependent; in its higher forms, it has regarded the alone God as the Almighty, the Omnipotent One. It has employed such terms as "Creator," "Preserver," or "Destroyer," "El-Shaddai," the "Lord of Hosts," to designate the permanent relations of this class which exist between the world and the Absolute. In the form of pious feeling, it has acknowledged the dependence of the will of the good man, for every good deed, upon the Divine Will; and gratitude for the bounties of harvest and vintage, as well as for insight into the truths of nature, of philosophy, and of politics, has characterized the temper of the wise of all ages. Nor have these spontaneous proofs of the absolute dependence of all finite existences, forces, and causes, upon the Will of God been allowed wholly to submerge those ethical convictions of responsibility, and of the rational character of

approbation and disapprobation, which emphasize the relative independence of the human will.

The third main class of relations which experience compels us to affirm as actually existent between the world and the Absolute is yet more obviously derived from man's highest ideals. These relations are such as exist between conscious mind and the expression, or manifestation, of its ideas in some form of actuality. More abstractly defined, they are summed up in the general relation of the controlling Idea to the concrete product which it shapes. The Absolute has actualized his ideas in the forms, laws, and final purposes of this vast complex of things and selves; God has shaped the world "*to his mind.*"

The validity of all human knowledge is committed to the proposition that the forms, laws, and final purposes of the world are not *merely* a subjective possession; they belong also to the things themselves. Unformed existences are not real: it is essential to the very being of everything to have, both actually and potentially, some appropriate form. Nor is there any Nature to be known, any Cosmos to be conceived of, which is not in its constitution obedient to laws in the pursuit of certain ideal ends. By the word "law" we can mean nothing actual but to indicate that things are all known to behave themselves under the control of immanent ideas, — just as, in fact, we know ourselves to do.

Forms, laws, and ideal ends, weave themselves together in a bewildering complexity, and with an activity so ceaseless and so intricate that it is always quite impossible fully to trace it. Yet somehow the known World is one; a marvellous unity belonging to the pattern woven by this vast machine — albeit, we cannot discover much as to what precisely that pattern may be. But the Being whose oneness of will is the source of all actual existences, and of their equipment of forces, and of their reciprocal causal activities, is also the source of the ideas and purposes which they all display. The Absolute

is not bare, blind Will, or mere Unity of Force. The Absolute is also the fountain of all that science regards as the forms, laws, and final purposes of the existences which, taken together, constitute the world. To affirm this is only to give the ultimate metaphysical explanation of the actual state of the case; to deny this is to make all such explanation forever impossible.

Looked at from the point of view which is interior and has regard to its so-called "nature" and its natural behavior, every thing forms itself as though endowed with the requisite ideas, as well as with the forces required to actualize those ideas. Its very being consists in its *self*-activity — that is, in its activity according to those ideas which define its own "self"; it is only such behavior that can impart the "relative independency" which particular realities possess. Looked at from the point of view which is exterior, and which discerns the dependence of every existence upon the action, upon it, of other related existences, every individual thing must be regarded as formed by other things, as having its own activity not determined by itself alone, but also by the other selves to which it stands related.

Looked at from the interior point of view, every thing appears to be *willingly* obedient to the laws which control the part allotted to it in the World of things. Indeed, these laws are themselves nothing other than the formulated expressions of the ideas which define the very nature of the thing; they are only its natural ways of behaving itself under a greater or less variety of changes in occasion and circumstance. But looked at from the external point of view, every thing appears to be *forced* to obey laws which originate outside of itself, and which are dictated to it by its environment, in accordance with the natures of those other things that constitute this environment.

Looked at again from the one point of view, every thing is seen to be seeking and, more or less successfully, winning its

own ends. It is a "will to live;" and it gets its will by using what it can of the "stuff" of its surrounding world as means to its own ideal ends. And according as it stands, of itself or in its own nature, high or low in the so-called scale of existences, it becomes the actual *locus*, as it were, of these same ideal ends. It has its own ideas of what it wants to be, and to do, of the ends it wills to attain; and it uses, and adapts as it uses, the means to these ends. But looked at from the other point of view, no existence is an end to itself; the rather is every existence only means to something other, which may be either higher or lower, nobler or more ignoble, worthier or seemingly more worthless, than itself. The worm serves the fish's "will to live" as its means; and the fish, having eaten of the worm, becomes means to the final purposes conceived by some man. Yet that same man may in turn be himself means to the final purpose of the worm; and this may enable the fish to make some portion of that same man a means toward the accomplishment of its own ideal ends. Only as we bring in "ideas of value," which are chiefly derived from the spheres of ethics, æsthetics, and religion, can we discern any correspondence with our own highest ideals in all this. But that the World, as man knows it, *is* in reality a vast complex of inter-related means and ends, a veritable maze of curious and often (from the point of view of our ethical, æsthetical, and religious ideals) unintelligible adaptations, we have the facts abundantly to prove.

All things, then, as looked at from both, and indeed from all possible, points of view, are both self-forming and formed by others, are behaving in accordance with law, whether voluntarily adopted or forced, and are following their own ends and also serving as means to the attainment of the ends of others. Such is "the world," as known by man. And the pertinent truth about it all is this: — With the growth of knowledge in the individual and in the race, such a picture of the world gains increasing breadth, and depth, and richness

of color and of meaning. At least this is so for the soul which allows itself to be influenced by those ethical, æsthetical, and religious considerations, which lie somewhat above and beyond the fields of general metaphysics, although they are not in nature altogether foreign or hostile to these fields. And the human race is made up — it is our faith — of an increasing number of such souls. Meanwhile, all the progress of science, with its gathering of new insights into the nature of the World, consists chiefly in endowing IT with newly discovered complications of form, law, and final purpose. For it is only as science weaves the pattern, in which form, law, and final purpose are ever-present, interlacing threads, that science presents us with the knowledge of a Cosmos, a genuine system of things, and not a mere jumble of mutually disregarding existences and of unconnected events.

When, now, the question is raised, What is the ontological relation of such a World to the Absolute? the answer need not long be delayed. For this answer does not come as the result of an endless chain of reasoning which carries the mind away from actual finite beings to infinite distances of space or time; or which requires a speculative insight that can dispense with all that falls under the conditions of space and time. This answer is, the rather, a true apprehension of what is implicated in these very conditions of what is the nature of the ever-present Reality.

Philosophy, since Kant, has denied the right of the ontological argument for the Being of God in its leap from a *mere* conception, however grand and æsthetically captivating, to the conclusion of a corresponding Reality. It has also objected to the cosmological argument that its reasoning, when conducted in accordance with the strictest obligations to its own logical character, involves it in the hopeless attempt at an infinite *regressus*. Backward and still backward must the mind go, from the conditioned to the conditioned, from one set or system of conditions to a pre-existent set or system of

conditions; but nowhere can this flight of thought come to its resting-place in the Unconditioned; nowhere does the mind discover a logical ground that is at once legitimate and final. But while the pre-Kantian theology misused these so-called arguments, the post-Kantian agnosticism has not done credit to the truth that is in them. Strictly speaking, they are not separable lines of argument at all; neither are they deductions that need, in order to validate them, the assistance of detailed presentation in syllogistic form. And, certainly, they are not correct specimens of scientific induction. They describe in faulty manner the inevitable, because the constitutional, legitimate, and rational, way which the mind of man takes in dealing with the complex realities of his complete experience. Human reason seeks a Theory of Reality. As it knows more of itself, of other minds, and of things, in their vastly complex and ever-shifting particular relations, it ceaselessly reaches after the unity of an explanatory Ground. It cannot possibly regard forms, and laws, and adaptations or uses of means to the realizing of ends, otherwise than as the products of mind. If the world is progressively better known as a vast complex of forms, laws, and final purposes, it cannot be known otherwise than as the expression, the manifestation, the realization, of Absolute Mind. This conclusion, we repeat, lies not at the end of a chain that can have no end; neither is it buried, as a pot of gold, at the foot of a rainbow painted by fancy in a painted sky. It is simply the mind's recognition of the inner and ultimate truth of the world, as the world is known by man — namely, as an *experienced* complex of forms, laws, and final purposes.

These, then, are the relations sustained by the world to the Absolute, which the mind of man finds implicate in all its cognitive experience. The world is the realization of the ideas of the Absolute. This is the assumption as to the Being of the Absolute that can be the Ground of such a world: It is Mind. Therefore, the relations of the world to the Absolute

must be conceived of as those sustained by the varied and interrelated realizations of ideas to their Ideal Source, to the Idea, to the absolute Mind.

Thus far we have been emphasizing the positive and universal aspects of the problem, as they reveal themselves in the lights shed by a theory of reality which bases itself in confidence upon the cognitive experience of man. All the actual relations of things and selves have their ground, and so their explanation, in the One Being. All those fundamental relations, whose application to real existences is implicated in the criticism of the categories, are always sustained by the world to the Absolute, as to its Ground. These affirmative positions represent the conceptions which a systematic and critical metaphysics has to contribute to the solution of this problem. But ethics and religion are accustomed greatly to concern themselves with negations and exceptions. This they aim to do in the interests of the practical life of man. For the will of man they require an *exception* to be made; it must *not* be conceived of as absolutely dependent upon the will of the Absolute, as are the wills of the lower animals, or those centres of a relative self-activity which we call things. Concerning his relation to nature, too, — religion and ethics demand a *denial* that man is a part of nature, or is subject to its laws, as are all the particular portions of "brute and inanimate matter." Religion wishes even to make man's existence as a self-conscious and ideating Self an *exception* to the common horde of existences which last only as the resultants of temporary combinations amongst physical or psychical elements. While all things pass away, man must be *non*-mortal.

No thoughtful student of metaphysics — not to say, the man who is wisely sensitive to those interests of life which have the highest value — can regard unsympathetically this demand which ethics and religion make for exceptions and negations. Theory of Reality can no more properly than can any other form of thought, tramp steadily onward with the iron

heel of logic over the quivering and bleeding souls of human beings. *They*, too, with all their pains and pleasures, their hopes, fears, faiths, and aspirations, are facts which concern our theory of reality. Knowledge itself is not independent of the emotional and voluntary activities of the knower. Knowledge has largely, if not chiefly, its own end to serve in the promotion of right conduct and the development of praiseworthy character. But philosophy does not serve ethics and religion in the best possible way by accepting the assumption of Kant, that knowledge has to be removed in order to "make room for faith;" or by divorcing utterly the principles of conduct, and of religious belief and worship, from the principles of "common sense" and of science.

So, then, whatever seeming exceptions or negations are demanded by the facts of ethics, æsthetics, and the philosophy of religion, in our theoretical way of conceiving the relations of the world to the Absolute, may wait until a critical testing of those facts can be made. But it is an important thought borrowed from metaphysics, that the mode of the Divine Will with finite wills is infinitely various; and that the manner of the dependency of these wills upon the Absolute is as manifold as is the number of these wills. Yet always this relation is, essentially considered, the same; for human wills have no force that is not drawn from the reservoir of infinite Force: they have no existence which is not a being-dependent upon the Being of the Absolute. It is also an important conclusion from our systematic study of metaphysics, that all the valid negations and denials, made necessary by the facts to which ethics and the philosophy of religion appeal, are virtually brought about by an interpretation of the categories upon a basis of our *total* and common experience. This position may be briefly illustrated in the case of those two theoretical statements to which the developed moral and religious consciousness of mankind is accustomed most emphatically to object. These may be summed up as follows: "The World *is*, or is *identical with*,

the Absolute;" and "the World is the emanation, or necessitated evolution of the Absolute."

"The World is, or is identical with, the Absolute." Let us briefly consider what can be the meaning of this. If it be intended by such a statement to affirm for these two conceptions an exact logical equivalence, or a complete sameness of significance, then the proposal is either of no particular value in a system of metaphysics, or else a judgment is laid down, in the form of the most assured, *a priori*, conclusiveness, which contradicts some of the particular conclusions reached by the critical attempt to frame such a system. If any thinker chooses, indeed, to say, "I employ these two conceptions — World and Absolute — in precisely the same way," then no other thinker can gainsay the right, even though the impropriety soon be made most obvious. But it has been shown in detail (p. 456 f.) that the attempt to conceive of the World, or Nature, as "absolute," inevitably results in the introduction of considerations which force upon the mind anew a most important division of these conceptions. The world considered as a vast complex of interdependent beings, becomes related to the World as *absolute*, somewhat as manifold phenomena are related to the one Actuality, or as many finite existences and occurrences are related to their One Ground. Nature, considered as an absolute unity, inevitably becomes split again into two parts, to which names must be given that indicate a return of the same fundamental distinctions: *Natura* is both *natura naturata* and *Natura naturans*. But this introduces over again, with no advantage from any higher point of view, the same old problem of the relations of the world considered as a known or conceivable complex of existences and events, to the Absolute.

If, however, it is affirmed that the world is known by all men, on account of the very nature of human knowledge, to be in reality absolute, the affirmation is either most obviously false or most profoundly true, according to the meaning given

to the relations expressed by such terms. To say that the terms on which men generally know the interconnected things and selves of their experience — the world that is each man's world — compel them to assert its equivalence throughout, in reality, to Absolute Being, is to say what neither comparative psychology nor philosophy can substantiate or even credit. On the other hand, that all human knowledge virtually discerns the presence of an absolute as the "support" and "realistic core" (to use figures of speech whose meaning has already been made plain) of every phenomenon, is a conclusion enforced by all critical epistemology. Something is real; this is the implicate of all cognitive experience. *What* is the real nature of this everywhere immanent Absolute, every attempt at a systematic and critical metaphysics wishes to expound more clearly. But when this attempt leads to the barren assertion of a merely logical equivalence between the World and the Absolute, it ends in empty abstractions.

The burden and the affliction of most forms of philosophical Monism has been a certain levity in the use of the conception of identity. The effort of the advocates of monistic tenets has been to establish this conception, with all the invincible force of a strictly logical demonstration, in exclusive command over the sphere of all relations between the world and God. The effort of objectors has been to show that this conception of identity, when applied to these relations, weakens, or disregards, or destroys certain ethical and religious facts and truths of great value. In most cases of dispute over this form of Monism, there has been need of a prior critical discussion of the conception itself, on the part both of advocates and of objectors. Now, in matters of reality, whether of physical fact and law or of mental life, "*identity*" never applies as a strictly logical equivalence, whether between existences or between events.[1] Employed

[1] See the discussion in the "Philosophy of Knowledge," chap. ix.

upon this subject, the principle only exhorts the disputants: "Stick to the same meanings for your terms, the World *and* the Absolute." But the very effort to do this introduces inevitably the same fundamental distinctions, and so brings on anew a discussion of relations, *as though* the mind could not possibly indicate precisely the same conceptions by the two phrases.

On the other hand, a critical estimate of the principle of identity, as this principle applies to all knowledge and to all theory, shows that these two assumptions enter into its applicability: "The Self is a life comformable to law, and maintaining its identity by this conformity;" and, "The principles of Reality not-my-self and the principles of my thinking must be the same." The principle of identity only secures self-consistency; it can never be converted into the form of a synthetic judgment applicable to a complex of actual known objects.

Whenever, then, any form of philosophical Monism attempts to express the relations of the world to the Absolute in terms of the principle of identity, its attempt must always move in the sphere of barren abstractions. On the contrary, the problem offered by the attempt to conceive of the relations between the world and the Absolute must always have its answer based upon actual knowledge of what known realities are, and of what they implicate. It can, therefore, never become a problem whose solution, or even whose discussion, is purely *a priori;* its answer cannot be set forth in strictly logical fashion, after the pattern of Spinoza or even of Hegel.

But the arguments urged against philosophical Monism are too often not well taken or judiciously expressed on this point. If God is not to be conceived of as the Absolute, then there is some part of the world which does not belong to Him, which is not God's world — though what sort of things or selves they are that are not in and of God's world, human thought cannot even conjecture. Moreover, if we deny

that the principle of identity applies to these two conceptions, in such manner as to separate by our denial the Absolute from the world, as to remove God — whether in respect of space, or time, or power, or co-conscious cognition — from any particular existence or actual event, we so far forth destroy the rational grounds of ethics and religion. For the "immanence" of the Absolute in the world is the one central tenet, as it were, of all systematic metaphysics. It is virtually this truth which all the critical discussion of the categories sustains and unfolds. It is virtually this truth which the analysis of this chapter justifies and expands. It is virtually this truth which all the theory of reality maintains. This theory itself is the form of monistic philosophy which is summarized in the following statements: all the objects of the world have for their Subject the Absolute; all the relatively independent centres of self-activity, of the forthputting and reception of forces, of causal action and influence, have their Ground in the Will of the Absolute; and all the forms, laws, and ideal ends of the world are realizations of the Ideas of the Absolute.

The development of the positive sciences involves the increasing conviction that the unification of the complex results of man's accumulating experience with things is possible. This is man's growing knowledge of the world. Philosophy, in its branch of metaphysics, shows that this possibility implies that Unity of Reality which the mind of man conceives of as an Absolute Self, whose most essential characteristics entitle us to call it Spirit. It belongs to the philosophy of the Ideal, to the reflective study of Ethics, Æsthetics, and Religion to expand and to defend the doctrine as to the nature of Infinite Spirit, and as to the more ideal relations which man sustains to this Spirit.

It is not necessary to follow in detail the truths, half-truths, and erroneous confusion which accompany every attempt to regard the Absolute as merely an unconscious,

non-mental, mechanical process, to be identified throughout with the descriptive history of the world's evolution in time and space. This is the form of the emanation theory which has been assumed, on the basis of scientific discoveries, in modern times. It is enough at present to say that this attempt inevitably brings on the same contest over ambiguous conceptions, the same necessity for making unalterable distinctions, the same demand for a thorough criticism of the categories, as prerequisites of any defensible theory of reality. Can the world emanate, or evolve, from its Self, unless this Being of the World be construed in such manner as to relate IT to its own processes of Becoming as the one, sufficient Ground of them all? And what is the real nature of a being that can sustain such relations? But the answer to these questions is precisely that which has been framing itself from the beginning to the end of this book. The valid conceptions of selfhood and of evolution, or an orderly and rational process of becoming, as applied to the sum-total of man's cognitive experience, have been chiefly influential in all its discussions.

CHAPTER XX

SUMMARY AND CONCLUSION

THE last Chapter brought to its close the discussion of certain psychological and philosophical problems which has been prolonged during a number of years. These problems all concern themselves in a general way with the following question: "What, in reliance upon the cognitive experience of all men and upon the assured results of the positive sciences, can we be said to *know* about the Nature of Reality? A brief statement of the opinions reached by so prolonged and varied a study seems appropriate at this point. It also seems not inappropriate that the impersonal attitude which has characterized the discussion hitherto should give way to that more familiar mode of intercourse which, in philosophical writings, is ordinarily confined to the Preface. In a word, I ask that the following Summary of Conclusions may be received as a privileged communication; that through it I may enter into those friendly personal relations with my readers, under which, without incurring the suspicion of egotism, thoughtful men like to submit to one another their most cherished reflections.

Some fifteen or twenty years ago there appeared to me to be much greater likelihood than now appears, that the movement to establish a study of the psychical life of man from the experimental, chemico-physical, and physiological points of view would result in a profound modification of the views hitherto current. This modification seemed likely to extend not only to the doctrine of the soul's nature, but also to all of those philosophical tenets which are naturally and necessarily

dependent upon the general conclusions of psychology. It was after a considerable period of time, fully occupied with experimental research, with reading of many books, and with painstaking reflection, that I published (in 1887) a work entitled "Elements of Physiological Psychology." During the period of its preparation, and at the date of its publication, the situation may be briefly described in the following sentences quoted from its Preface: "There can be no doubt that an important movement has arisen in recent times through the effort to approach the phenomena of mind from the experimental and physiological point of view. . . . Some writers have certainly indulged in extravagant claims as to the past triumphs of so-called Physiological Psychology, and in equally extravagant expectations as to its future discoveries. On the other hand, a larger number, perhaps, have been inclined either to fear or to depreciate every attempt to mingle the methods, laws, and speculations of the physical sciences with the study of the human soul. These latter apparently anticipate that some discovery in the localization of cerebral function, or in psychometry, may jeopard the birthright of man as a spiritual and rational being." Not sympathizing with either of these extremes of expectation and of fear, yet having upon my mind both the philosophical and the ethical and religious interests involved, I undertook the requisite course of investigation. On entering upon the task I freed myself, as far as possible, from prejudice; and I summoned to its execution all the industry, judgment, and resources at my command.

The conclusions to which a study of man's mental life from the physiological and experimental point of view led me were summarized in the Third Part of my book, under the heading, "The Nature of the Mind." Briefly expressed, these conclusions left the popular dualism standing unshaken in its fundamental positions, although with a greatly altered scientific exactness of statement and with an added evalu-

ation. The reality of the human body, considered as a molecular mechanism, connected by a great variety of chemico-physical laws and forces with the world of Nature, and yet standing in peculiar, and even unique, relations to the Mind, remained unimpaired. But the unity, the reality, and the causal efficiency of the mind remained even more clearly manifest, both as an original assumption of all psycho-physical researches and also as a conclusion progressively established by those researches.

Moreover, it then seemed, and it has always seemed, to me that these two realities, so intimately and wonderfully related, positively will not submit to having the truth about their relations told in terms of a theory of psycho-physical parallelism. I have, therefore, remained from the first a determined and consistent opponent of this theory. I still regard its downfall as its inevitable doom at the hands of psycho-physical science. The rather did the body and mind of man appear to be at the end of all purely *scientific* investigation, in fact, just what, antecedent to any investigation, "common-sense" supposes them to be. To science, as to common-sense, body and mind appear to be real and variously interrelated existences, which, by their combined causal efficiency somehow build up the unity of a manifold Self. Or, — to quote again from the same work, — "The subject of all the states of consciousness is a real unit-being, called Mind; which is of non-material nature, and acts and develops according to laws of its own, but is specially correlated with certain material molecules and masses forming the substance of the brain." To say essentially the same thing from the evolutionary point of view: "The development of Mind can only be regarded as the progressive manifestation in consciousness of the life of a real being which, although taking its start and direction from the action of the physical elements of the body, proceeds to unfold powers that are *sui generis*, according to laws of its own."

As to the more particular nature of that real connection which both the popular impressions and the postulates of psycho-physical research assume to exist between brain and mind, I showed in the treatise just mentioned, that modern scientific studies and discoveries do not essentially alter these impressions and these postulates. "The assumption that the mind is a real being, which can be acted upon by the brain, and which can act on the body through the brain, is the only one compatible with all the facts of experience." This is true, however the facts of experience are garnered; whether from the behavior of the general mental life under the most ordinary conditions, or from the more guarded and artificial activities of the subjects of laboratory experimentation. The theories of materialism, of psychological idealism, of occasionalism, of pre-established harmony, "and all similar theories, do not in the least assist us to escape the difficulties which attach themselves to every conception of causation," when applied to the relations of brain and mind. On the other hand, there is nothing which science knows "about the nature of material beings and the laws of their relation to each other, or about the nature of spiritual beings and their possible relation to material beings, or about the nature of causal efficiency, whether in the form of so-called physical energy or in that of activity in consciousness, which forbids the use of the causal conception in this connection."

In a word, so far as the metaphysical conceptions of "reality," "unity," "interaction," "causal efficiency," etc., are concerned, whether taken into his work as assumptions, or derived from his work as conclusions, the student of physiological and experimental psychology has nothing essential to change, and little to learn. Psychology, pursued by experimental methods, does bestow much valuable information as to what sort of realities and unities both body and mind are; and as to what are the more precise formulas for the almost infinite variety of interactions, or causal relations,

which constantly take place between the two. But a scientific empirical psychology ends where it begins; — namely, with the use of those uncriticised but valid conceptions which all men employ with more or less of intelligent meaning when speaking upon the same subjects. Neither a materialistic nor a spiritualistic monism, and even less a theory of psycho-physical parallelism, derives any sufficient support or comfort from a scientific study of the phenomena of human consciousness when undertaken from the physiological and experimental points of view. Such a psychological investigation, if true to what it finds, remains upon the basis of a common-sense dualism to the very last. And such a naïve dualism understands the terms, " body," " mind," and " relation of the two," in the metaphysical meaning which, without subjecting it to a thorough criticism, I elaborated, in the concluding chapters of the " Elements of Physiological Psychology."

By no means all the processes of the mental life, however, and not even all the elements of any of the developed mental processes, admit of treatment from the physiological and experimental point of view. How true this is at present, any one can understand who will compare with the depth and breadth and wealth of content which actuality presents, the thin and meagre description of the nature and development of the mind which a strict adherence to this point of view permits. He is a poor and pitiful soul, indeed, who has no more in real experience than the use of laboratory methods can detect and depict. This statement tends, not toward the depreciation of the workman in experimental psychology, but rather to the fuller appreciation of any work, pursued by any method, which will advance the details of so complex and difficult a science as is the psychology of man.

It was with such convictions in mind that the investigations were pursued (both contemporaneously with, and subsequently to, those whose results were published in the " Elements," etc.) which I embodied in a work issued in 1894. This work

was entitled, "Psychology, Descriptive and Explanatory." It aimed to give a fairly complete picture of the activities and the development of man's mental life, together with such explanations derived from all sources as the present state of the science makes possible. In this book, therefore, I treated not only the sensations and the more primary intellectual processes, but also the development of memory and imagination, of thought and language, of reasoning, of the emotions and passions, the ethical and æsthetical sentiments, as well as the impulses, instincts, and desires, and the unfolding of character. Nor did it seem to me that psychology thus pursued, if faithful to its task of describing all the activities and laws of development belonging to mental life, could escape having something to say upon such universal conceptions as space, time, and causation; and upon the cognition of Things and of Self. Chapters upon these topics, therefore, carried psychological discussion up to the very limits where philosophy receives it from the hands of psychology.

In the concluding pages of the "Descriptive Psychology" I gathered together those more general statements concerning the nature and laws of the mind which the detailed study of its descriptive history seemed to make good. In presenting these conclusions it was admitted that an original nature, or derived potentiality, for the human soul is, after all, the assumption which underlies all our attempts at the particulars of a true story of its actual development. "In the beginning was Mind, already equipped to see and hear and remember and imagine and think." Yet "there are, it would seem, certain principles which belong to all development of the mental life of man; and every stage of consciousness, and every form of so-called faculty, in every stage of its formation, appears to conform to these principles." Among such principles I recognized the following four: The principle of Continuity, the principle of Relativity, the principle of Solidarity, and the principle of Teleological Import. By the first of

these it was intended to emphasize the truth that the real life of every mind is a connected and interdependent process of becoming. "The very nature of the mind, so far as science can observe it, is seen in this unbroken vital flow. Its being is in being just such an uninterrupted stream of psychic life." With this principle is closely connected the principle of relativity. "Every individual element, or state, or form of mental life, is what it is only as relative to other elements, states, and forms of the same mental life." Or combining the two principles we are compelled to regard the true picture of mental life as that of "a continuance of interdependent psychoses." Thus "descriptive psychology ends in adopting the conception of a being with a unique unity of nature and an equally unique history of development."

In spite of the elasticity and changeable quality which the mind of the individual man possesses, when regarded as a series of interconnected processes of becoming, the whole of mental life has a certain solidarity and unity of character and aim, and not simply a unity in the successions of a comparable time-series. For "the effect of every partial or complete working of the psychic mechanism is felt upon the weal or the woe of the whole mental development; and this development necessarily tends toward some kind of unification of result. Such is a brief statement of the principle of solidarity as applied to the life of the mind. It is under the action of this principle that the original vague and relatively plastic unity of disposition, instincts, impulses, etc., becomes the more clearly crystallized and definitively shaped unity of a "character." But throughout the descriptive history of the mind we notice traces of the teleological principle. "Activity to some end is the ruling principle of mental development. The self-conscious, intelligent adoption of a plan, and selection of means for its pursuit, is distinctive of the *acme* of man's development. The more comprehensive this plan, and the wiser the selection of means, the higher is the standing

of the individual in the scale that measures the development of Mind."

"In fine, a combination of all these principles, as they appear in their actual operation, secures for every so-called stream of consciousness that continuity, related action, solidarity of character, and that intelligible import as judged by the light of ends and ideals, which are necessary to the history of what we call a Soul, or a Mind."

But all psychological treatises, even when they advance into the field of metaphysics somewhat further than the modern conceptions of psychological science seem to warrant, leave many of their most important conceptions and principles in a quite unsatisfactory condition. This was admittedly and designedly true of those treatises to which reference has just been made. The conclusion had, indeed, been reached, that the science of mental phenomena and the development of mental life both assumes and also confirms, expands, and clarifies a certain metaphysical conception of Mind. This conception regards every mind as an active, real, and unitary being, which stands in a variety of reciprocal causal relations to a material body; and which, together with this body, constitutes a complex and looser unity called the Self, that through the body, sustains all its relations to a Nature which is known as "not-itself." But herein is involved a number of conceptions that demand further reflective treatment, and a more thorough criticism.

What is it for the mind to be "real," to be "unitary," to stand in "causal" or other "relations" with the body? And what, if anything, follows from the answer to these questions which has an important bearing on inquiries as to the origin, destiny, and place in nature of man's mind? It was to the solution of such problems as these that I attempted to make some slight contribution in a book entitled, "Philosophy of Mind" (or, "An Essay in the Metaphysics of Psychology"), 1895. With reference to the relations always existing

between the science of psychology and the metaphysics of mental life and mental development, I showed in the opening chapters of this book that only two positions are tenable. The first of these positions assumes and maintains throughout that common-sense dualism which, as had already been shown, is unimpaired by the facts of psychological science. The second approaches the science with a frankly avowed metaphysical standpoint, and then either modifies or strengthens this standpoint by the measure of success which the theory displays in its treatment of the phenomena. In these opening chapters I strove to make it clear, by a thorough criticism of selected examples, that neither the theory of naturalism (or materialism), nor that of a solipsistic idealism, nor that of psycho-physical parallelism, succeeds in remaining honestly and frankly consistent with itself, while at the same time dealing in a scientific way with the phenomena of Mind.

Now the "final aim of psychology is to understand the nature and development, in its relations to other beings, of that unique kind of being which we call the Soul or Mind." But "philosophy seeks a unitary conception of the real world that shall be freed, as far as possible, from internal contradictions and based upon all the facts of nature and of human life." So, then, psychology, although, when considered as the science of mental phenomena and of mental development, it is not co-extensive either in range, method, or conclusiveness, with philosophy, is, nevertheless, the proper propædeutic to all philosophy, and especially to the doctrine of the Self. "In particular, the problems of philosophy all emerge and force themselves upon the mind in the attempt thoroughly to comprehend and satisfactorily to solve the problems of a scientific psychology; and the attempts along the different main lines of research in psychology to deal scientifically with its problems all lead up to the place where this science hands these same problems over to philosophy."

Starting with that "Concept of Mind" which man's most incontestable cognitive experience validates, I showed that it is totally misrepresented by those psychologists who regard the mind merely "content-wise," as a temporary aggregate of sensations, images, etc., in an ever-flowing stream of consciousness. For "every state of consciousness is not only capable of being regarded on the side of passive content of consciousness, — it must also be regarded on the side of active discriminating consciousness;" and, indeed, "consciousness regarded as objectively discriminated, and consciousness regarded as discriminating activity, are only two sides, as it were, of one and the same consciousness." In fine, "all psychic life manifests itself to the subject of that life as being, in one of its fundamental aspects, its own spontaneous activity." *It is this cognitive experience of being a "Self-alive," from which we take all our startings, and to which we constantly return again, in every process of conceiving a "human mind."*

When, now, philosophy proceeds to inquire concerning that reality and unity of being which the mind has, it can only discover and accept as final the answer which lies not afar off, but is before us in every act of the life of self-consciousness. "The reality of mental life consists in actual mentality; it is the really being self-conscious, self-active, knowing, remembering, and thinking, as Mind." Its realest being is its "Being-for-itself." When, however, the philosophy of mind attempts to understand the reality of mind in accordance with an intelligible conception of identity for the Self, and a real permanence in time, it encounters the undoubted fact of change. The conception of self-identity cannot, therefore, be held in a form contradictory to the fact of change. On the contrary, "changes heighten rather than diminish the reality and validity of the consciousness of identity properly described and understood." Indeed, "actually to be self-conscious and to remember recognitively is to

be conscious of being identical and self-same." But what is required for the highest kind of real identity of the mind, and for an actual mental development, is *to remain true to some chosen ideal.* For of that unitary being we call a mind, this is emphatically true; "its reality is, under all circumstances and forever, a reality which must be realized in its own peculiar way, in order to maintain itself at all."

In brief, the reality, self-identity, and unity, of man's mind consists in its actually being a self-conscious Will, recognitively remembering its own past, actively thinking itself into a unitary Life, and pursuing by intelligently chosen ends its own ideal aims. Of such actual being of a soul, different men partake in far different degrees, according as they more or less perfectly realize the conception of a Soul.

It is not necessary even to summarize the conclusions of the detailed discussion which followed, concerning the relations, in actuality, between mind and body. This discussion occupied the later chapters of the "Philosophy of Mind." Its conclusions all tended toward the vindication anew of the "principle of causation" as applying to these relations. But the discussion also showed that this principle itself has its own birth, and its own most ultimate explanation, in the undoubted knowledge which the Self has of itself in its changing relations to things. The ultimate and mysterious fact of interaction, which has its primary source in our experience as a total complex of actively and passively moulded phases of consciousness, neither of itself abrogates the reality of the interacting existences nor impairs the unity of man's experience of the World. "For partially, and often chiefly or even almost exclusively, the explanation of the interaction of every two beings is to be found in the so-called 'nature' of the beings which interact; that is, the interaction itself is recognized as a mode of behavior which admits of no further explanation than the self-activity of the beings which interact."

When, however, we come to consider the "Place of Man's

Mind in Nature," this duality of body and mind in the unity of one Self, and this multiplicity constituted by every individual self in all its known or conceivable relations with other selves and with things, and the infinite multiplicity of things thus more or less intimately related to each self, must be harmonized in some way. The need arises for an explanation of the totality of our cognitive experience in some higher and more Ultimate Unity. Such a unity certainly is not furnished by the vague or purely negative conception of a third something which is neither body nor mind. For all modern science agrees that the body, considered as a part of nature, must be held to come under the chemico-physical principles which define the being, and control the changes, of other material things. Man's body is of the earth, earthy. This is not said to its despite or depreciation. For nature is somehow, when rightly understood, seen to be expressive of a yet larger and more mysterious selfhood than that which any man can claim to possess or fully to comprehend. Man as placed in Nature, both body and mind, one Self, belongs, together with all other selves and things, to the Being of the World. And the "Being of the World, of which all particular beings are but parts (not in any spatial significance of this word), must then be so conceived of as that in IT can be found the one Ground of all interrelated existences and activities. Thus does the philosophy of Mind open before us the larger problems of the philosophy of all existences, of the 'Being of the World.'"

At this point in the serious reflective study of man's cognitive experience it customarily is that our confidence in our conclusions begins to be disturbed. That man may attain something approaching a descriptive science of the phenomena of his own mental life and mental development as an individual mind, it is not easy to doubt. If one will avoid the philosophical mysticism which uses language legitimately derived from, and interpretable into, terms of experience, in the ille-

gitimate and vain effort to set forth what lies outside of all possible experience, then one may attain some sort of a Philosophy of Mind. If one seeks, not the reality, the unity, the self-identity, and the relations to other realities of an unapproachable *Ding-an-Sich* of a soul, but the actuality, unity, self-identity, and actual relationships of the self-knowing man, then one may find valid answers to one's questions. But what invincible opposition, what wholly insurmountable obstacles, may not a reasonable agnosticism offer to even the first attempts at a metaphysical inquiry into the "Being of the World"!

Doubtless, different students of the profounder problems which are proposed by the experience of man with himself and with things come to the sceptical halting, or to the entrenched position of agnosticism, at quite different points along their faltering. Probably, in fact, most men become fixedly agnostic at the point where they get tired of reflective thinking. And the history of philosophy seems to show that somewhat of the same experience characterizes the reflective thinking of the race. But consider sympathetically the position in which I found myself as an apparently logical conclusion, a definitively scientific resultant, of all my preceding investigations in psychology and philosophy. I had studied the life of the Mind, originally approaching it from the physiological and experimental points of view. But this study had left the problems of its reality and unity, and of its actual causal correlations with the body, unchanged in their essential character and unimpaired in their validity. In attempting further the solution of these metaphysical problems, I had found myself irresistibly carried along into all the larger problems of a cosmical metaphysics. After all, this is only saying that the scientific investigation of man's mental life had issued just where every scientific investigation issues, in the great and deep ocean of the World's Universal Life. In trying to understand my own mental being, I had found this

being intelligible to itself, only as causally related to the physical changes of the body, and through them to the Being of the World. In a word, I had found my selfhood inextricably interwoven with this Being of the World; and yet, *in just that way and in no other*, did I have all the reality, unity, self-identity, and power for good or evil, which I actually possessed. But when such an all-inclusive ontological problem is thus definitely presented to the mind of the reflective thinker of to-day, he cannot easily so far escape from the *Zeitgeist* as not to raise the previous question. And the previous question is the epistemological problem.

Can man know Reality? — the reality that is objective, in the sense of being *extra*-mental and not to be identified with a passing phase of the knower's mind. For let it not be forgotten that the existence and the characteristics of such reality are implicated in the fundamental duality of self and not-self, causally related. And this duality had been found to constitute both the underlying assumption and the final conclusion of a scientific psychology. But this duality itself could be accounted for only as a part of the problem of a higher and more comprehensive Unity of Reality.

The answer to the problem of the "Being of the World," on its epistemological side — the question, namely, as to the possibility, nature, and limits of man's knowledge as bearing on the problem of reality — took the final form of a book published in 1897 on the "Philosophy of Knowledge." In its Preface I ventured to speak of my work as that of a "pioneer" among recent writers in English on psychology and philosophy. The word was, of course, not intended to embody the claims of a discoverer, but rather the embarrassments and difficulties of one who has for his task the clearing away of obstacles, — and this, in the wish and the hope that his successors may thereby find easier paths made ready for them. It still seems to me, as it did then, that while English psychology and philosophy has been very fruitful in works on

Logic, and fairly so in works on Metaphysics, it has for a long time neither accomplished nor attempted the problem of a true *Erkenntnisstheorie*. It was the effort to examine the experience of the common life of man as a knower, from the standpoint of a modern science of psychology and with a view to disclose and to test its fundamental assumptions, which I desired to make.

In the "Philosophy of Knowledge" I stated the problem before me in the following terms: — "a philosophical criticism of knowledge, with a view to point out its origin and nature as implicating reality; to validate it by reducing to their simplest terms and arranging in a harmonious whole its necessary forms, its assumptions, and its postulates; and to mark out its limits by further criticism and especially by distinguishing the sources and kinds of error and of half-truth." The inquiry into the nature of knowledge was introduced by a brief critical survey of the history of opinion and of the results of psychological analysis. This history seemed to me to evince the impossibility of discrediting the cognitive faculties of man, and then saving to knowledge, or to faith, or to practical postulates, some specially favored kind of cognition. Neither do I believe that the foundations of the "plain man's consciousness" can be undermined by showing its objects to be "appearances," and confidence still be reserved in the "reality" set forth by some towering superstructure of speculative thought. The principle of self-consistency is of the last importance to reason. It is, in fact, only one form of stating the undying self-confidence of reason itself.

I intended to show by psychological analysis that cognition is not mere intellection; and that the activity of something more than the logical processes is indispensable to the origin and growth of man's cognitive experience. On the one hand, there is no knowledge without thought; knowledge is born of thinking, which has arrived at the pausing place of a judgment, — a finished product of the mind's synthetic activity. On the

other hand, the result can be called "knowledge" only upon the supposition that the judgments which enter into the processes of reasoning have something far other than mere correctness of form. Every judgment of the cognitive order — whether true or false — implicates the assumption: "What is subjectively united in my act of judging belongs together in the unity of a really existent world." Moreover, any searching analysis shows that feeling and willing enter into every cognition, as essential "moments" of it, — of whatever sort the cognition analyzed may be. Feeling is not external to cognition; nor is it mere impulse or influence to cognition; it is also an inseparable factor of every cognitive act. The cognitive judgment is reached under the influence of subtle forms of affective consciousness; and it is distinguished as *cognitive* only as it is more or less tinged with emotional content.

But especially true is it of man's experience as a knower, that it comes to him only as ceaselessly active, as a restless, striving, and achieving Will. In a word, man's whole self is concerned in all his cognitive experience; knowledge is an attitude of the whole self toward reality; growth in knowledge is dependent, for every man, upon the characteristic development taken by his entire self. So that, in no unmeaning use of the words, cognition must be considered as a *quasi*-ethical achievement involving all the so-called faculties of man.

In the later chapters of this book I went on to show that ethical and æsthetical *momenta* enter even into the so-called "scientific" knowledge of mankind. So that the schism between the ethical and the cognitive man, which Kant attempted in the interests of morals and religion, can no more be perpetuated or justified than can the schism which Mr. Bradley has set forth, in the interests of metaphysical theory, amidst and between the "plain man's" cognitive consciousness of so-called "appearances" and his own speculative construction of "Reality."

If, however, we proceed to divide human cognitions accord-

ing to the most fundamental differences in their objects, there are two main classes to be considered. These two are the "Knowledge of Things and the Knowledge of Self." As to the character and amounts of the ontological implicates in both, they differ in very important respects. Out of the same roots of man's total experience there emerges, by the active processes of knowledge, the most fundamental of all our distinctions in the kinds of Being. This distinction itself has its origin in the nature of the mind as related to other realities; and yet the distinction can never be realized except as the mind itself, by its own discriminating, segregating, and unifying activities, brings it to pass. It is born in knowledge; it is inseparable from knowledge; and it is both the assumption of every cognition and also the conclusion to which every cognition returns. For the reality of the subject and the reality of the object, and the actuality of that relation between subject and object which is essential to knowledge, are an indubitable cognitive experience. That I, the knower, really am, and that my object really is, and that subject and object actually stand in this unique relation — all this is only to enumerate the implicates of every particular act of knowledge.

When, however, the object of my cognition is some Thing and not simply some state of the Self, what I know or know about the object is of a different order, evaluation, and accepted validity. Perception of things by the senses — the envisagement of the not-self — believes, indeed, and must believe, in itself as an indubitable experience of the trans-subjective. But "while the knowledge of Self may attain an intuitive penetration to the heart of Reality, the knowledge of Things remains an analogical interpretation of their apparent behavior into terms of a real nature corresponding, in important characteristics, to our own." Thus does the *self-like* nature of things, as known to man, seem to be an integral part of the assumptions necessary to all the self's knowledge of things.

Further light is thrown upon this contention by an examina-

tion of the degrees and limits of knowledge. For I went on to show that there *are* degrees of that realized attitude of men toward what is actual, which we are accustomed to call "knowledge;" and that these degrees are to be measured by a certain ideal standard of perfection. "The immediate knowledge of the Self by itself is, in actuality, the realized ideal of knowledge." And as the different kinds and branches of the experience of man as a knower draw nearer to, or recede farther away from, this central light, they gain or lose in the certainty of knowledge. For it is with myself, as in active changing relations, to my Self and to that which I can only recognize as "the Other," that actuality abides. Transcendent entities and principles, made use of in the interests of explaining experience in general, must therefore be derived from a basis of concrete experiences with acknowledged actualities.

The figurative words "derived from a basis of concrete experiences," and all similar phrases, suggest the part which reasoning plays in the growth of human knowledge. A philosophy of knowledge must, therefore, examine critically the postulates of all reasoning, with a view to see what they tell us as to the validity of all our mediate knowledge. *Science*, in all its branches, is a matter of mediate and derived cognitions. These logical postulates of all mediate knowledge are the so-called "Principle of Identity and Difference" and the "Principle of Sufficient Reason," — as considered from the epistemological points of view. By a realistic criticism of these postulates I showed that, according to their very nature and universal application, they amount to this conviction: "The principles of all Reality — including reality not-my-Self — and the principles of my thinking must be the same."

As for the Principle of Identity, it appeared to me significant of the self's recognition of its own presuppositionless form of mental life, when in the act of judging cognitively. In this meaning of the words, at least a momentary self-identity is the predicate which knowledge assigns to all that is

judged really to exist. But this principle, when taken into connection with the universal fact of change, guarantees the continued existence of every concrete reality as a series of "*self*-produced" but "*other*-related" changes, which are conformable to law, and which maintain the identity of the particular reality only by such conformity. This, it seems to me, is *to conceive of every Thing as being real by virtue of its self-consistency after the pattern of the self-identical Self.*

The practical efficiency of that law of mental life which, subjectively regarded, is called the "Principle of Sufficient Reason," depends upon the mind's rational determination to reach the goal of knowledge, — namely, the establishment of causal relations that have truth in reality. But "causality" is itself no invincible bond that, in a quasi-external way, seizes hold of things and forces them into a Unity. It is, the rather, *a way of conceiving the "Being of the World" after the analogy of the Life of a Self, as a striving toward a completer self-realization under the consciously accepted motif of immanent Ideas.* The principle, as a postulate of all reasoning, and so of all science, implies, (1) some sort of unitary Being for the really existent; (2) that this Being is Will; (3) that the differentiation of the activity of this Will, and the connection of the differentiated "momenta," — the separate beings of the world, — is teleological and rational, like that of our own Self.

Thus, in all its work of generalization and inference, I saw that the mind of man carries over to its concepts the potencies of feeling and will with which the Self knows itself to be endowed, and which it analogically feels obliged to recognize as essential to the being of Things.

When we bring ourselves frankly and courageously to face the difficulties which the current agnosticism opposes to our confidence in human knowledge, we find them to be quite other than those with which it is customary to conjure. As to the possibility of transcending experience and so reaching

the Real, I showed that in the meaning of the words as employed by the agnostic argument experience is always and necessarily transcended by knowledge. Indeed, the very question which agnosticism too often neglects to consider, and which it must always fail to answer, is precisely this: "*Why does experience, in order to explain itself, need to transcend itself as mere fact?*" For without actually reaching and grasping, by all those potencies of the soul which the act of cognition involves, the real conditions, universal laws, and related entities of the Self and of Things, we cannot even form the conception of human (*cognitive*) "experience." Some critical estimate of the ontological implicates of knowledge is, indeed, a necessary part of every critical theory of knowledge. But this very estimate shows us a transcendent Real, present in experience, whenever the life of consciousness becomes a completed act of knowledge. If we inquire *as to how* this can be, we find that the entire complex condition of the subject, in the act of cognition, involves and guarantees the Being of the transsubjective existent. Inasmuch, however, as all knowledge of the nature and transactions of the non-self is analogical, a true and full knowledge of Self is the prime condition of a valid and ever larger knowledge of the ultimate nature and actual transactions of all Reality.

I then went on to show in detail that neither scepticism, nor agnosticism, nor criticism, ought to shake man's confidence in the validity of his knowledge as involving this general ontological postulate: The Being of the World is some kind of a Unity, like that of the Self, because known to be self-differentiating in accordance with immanent Ideas. Alleged "antinomies," and alleged or genuine distinctions between truth and error, do not penetrate the heart of man's cognitive experience so as to let the life-blood out of this central source of all his potency as a knower of the truth of things. All the derived and subordinate "criteria of knowledge," so-called, are included in the persistent effort of the

individual and of the race to arrive at an harmonious and satisfactory experience that is based on this fundamental postulate. Every correct view of the nature, origin, limits, and implicates of man's cognitive powers has thus an undoubtedly important teleology. As we rise into the higher regions and dig down deeper about the foundations of human knowledge, the epistemological problem is answered by reference to the aims of the Being that realizes the highest and best conception of Life. "Cognition is part of the very life of the Self; but it is not the whole of that life; it serves that life in its striving after the realization of ideals. Thus are we prepared to contemplate the objects of man's cognition, not merely as interconnected beings and transactions obedient to law in *bare* fact, but also as moments in the Life of a Being that is actually realizing its own immanent ideas."

Finally, if one elects to pursue his agnostic doubtings with a complete sincerity of feeling and with strict logical consistency, they lead him into that black gulf which has no light, no bottom, no discernible sides, no outlook upward; in it, all forms of science and all practical cognitions, as well as ethical and religious faiths, are totally lost. This is for the rational mind to perish utterly, through a seeming devotion to the exigencies of logic; — while at the same time being guilty of the irrational from the epistemological point of view, and from the practical point of view, of coquetting and dissipating one's virility in companionship with the absurd. "Whereas, if we will once admit with hopeful intelligence and reasonable cheerfulness what we are bound to admit in some manner and to an indefinitely large extent, — namely, the correspondence or systematic relationship of the cognitive Self with that all-inclusive Reality which encompasses it, when conceived of as an Absolute Self, — then all the separate and subordinate forms of relation are taken up into and merged in a relation between the individual and the Universal — both cognized in terms of Self." For, essentially considered, knowledge *is*

a species of intercourse between selves. And if human cognitive experience is all relative *to* the knower, and *of* related things, it is none the less "the establishment of a relation between the *Revealer*, the Absolute Self, and the Self to whom the revelation comes."

And now, in the discussions just closing, I have tried to show that the epistemological principles of my earlier book are confirmed by a critical examination of all those characteristics of Reality which all men, whether in the exercise of their naïve cognitive powers or as acute and penetrating students of the positive sciences, actually accept. My "Theory of Reality" is, in fact, the detailed ontological doctrine of that very assumption with which the philosophy of knowledge found all human experience, both ordinary and scientific, to be penetrated. All things and all selves are virtually understood by the knower, man, to belong to, to be manifestations of, dependencies upon, this Absolute Self. And developing self-consciousness, as well as the progressive seizure of the truth of the reality of things, leads the mind of man to recognize that the ultimate Being of the World is its own indwelling and absolute spiritual Life, — the Life of a self-conscious Will and Mind which stands related to that complex of objects which are made known in all human experience, as their One and Ultimate Ground.

Throughout these prolonged investigations into the nature of the Real I have steadily maintained my confidence in the unity of man's being, and in the Unity of Reality which philosophy aims to find and to expound. I cannot allow that there is a schism between the philosophy of the Real and the philosophy of the Ideal, between general metaphysics, with its two branches of the Philosophy of Nature and the Philosophy of Mind, and the metaphysics of Ethics, Æsthetics, and of Religion. For man, as fitted for knowledge and for conduct, is one; and the World, in which he thinks and acts and hopes and fears and dreams and prays and worships, is

One. But the phenomena and principles of ethics, æsthetics, and religion have much more to tell us as to that Being of the World which is known to science in terms of the Absolute Self. Its higher spiritual characteristics, if such are to be found, must be discerned and harmonized by a critical reflection which deals chiefly with the ideals of man. Not as though realities could either be, or be known, in separation from ideas; or as though the Real were not ideal, or the Ideal had no place in reality. Yet the whole being of man must tell its story, and find itself satisfied, if possible, in the philosophical conception of the Absolute. This conception, therefore, must get its more spiritual content of truth and beauty from the study of Ethics, Æsthetics, and the Philosophy of Religion.

INDEX

Absolute, the, mystical conception of, 160 f., 450 f.; not the unrelated, 170 f., 493 f., 497, 499; but the source of relations, 170 f.; and a system of relations, 173 f., 333; as a life in time, 208 f., 212 f.; and a Unity, 335 f., 415 f.; conceived of, as a Self, 397 f., 413 f., 415 f., 418, 489 f.; or as a material whole, 456 f., 460 f., 509 f.; relations of, to the World, 493 f., 501 f., 507, 509 f., 520 f., 524 f.; as source of relations, 499 f., 507, 512 f.; as omniscient, 501 f.

Activity, as "core" of Being, 123 f., 257 f.; as essential to substance, 125 f.; self-felt, the origin of the category of force, 257 f., 260 f.

Actuality, as distinguished from phenomena, 34 f., 37 f., 42 f., 46, 54; as applied to the Self, 39 f., 42 f., 481 f.; of the Ideal, 473 f., 479 f.

"Affinity," meaning of the chemical, 286.

Anthropomorphism, as respects the category of force, 261 f.; and of forms and laws, 352 f., 354 f.; and final purpose, 372 f.

Appearance (see "Phenomenon").

Aristotle, the title, "metaphysics," 16 f.; on motion, 226.

Atomic Theory, metaphysics of, 442 f., 444 f., 446.

Axiom, nature of the, 307 f., 311 f. 314 f.

Bain, on force and matter, 437.

Balfour, Mr., on the æsthetical element in metaphysics, 60.

Becoming, Principle of (see Change).

Being, of the particular, 111 f., 123 f., 132 f.; conception of the "pure," 112, 122 f.; of "Things," 116 f.

Berkeley, ontology of his idealism, 8, 97.

Bernoulli, on *actio in distans*, 275.

Boyle, on relation of experience to metaphysics, 28.

Bradley, Mr., on reality and appearance, 9; his doctrine of the categories, 104 f.; and of the ground of cognition, 114; his doctrine of "self-consistency," 121 f., 158, 323; on the concept of space, 229.

Categories, the, as subject matter of metaphysics, 25 f.; Things as the harmony of, 64 f., 84 f.; enumeration of, 67, 84 f., 162 f.; inseparable in reality, 87 f., 395 f.; but connected in cognition, 88 f., 492 f.; yet independent in characteristics, 94 f.; and interrelated and united, 98 f.; proofs of the unity of, 106 f.; as products of evolution, 222 f.

Causality, conception of, 261 f., 266, 360 f.; as applied to body and mind, 411 f.; the totality of Being as a Cause, 412 f., 506 f., 509, 510 f.

Cell, behavior of the, 287.

Challis, Prof., on *actio in distans*, 275, 276.

Change, as a category, 140; as a principle of Becoming, 141 f., 151 f., 154 f., 158; is actual, 141 f., 148 f.; and matter of cognitive experience, 143 f., 148 f.; as applied to Self, 143, 145 f.; and to Things, 143, 145 f.; limitation of, 149 f.; as in a system, 150 f.

Clerk Maxwell, on the conception of energy, 272 f., 282 f.; and of matter, 431 f., 433, 435.

Criticism, its relations to metaphysics, 7 f.

Cognition (see Knowledge).

Cotta, on union of force and matter, 436.

Descartes, his "First Law of Nature," 433 f.

Ding-an-Sich, conception of, 112 f., 122 f.

Du Bois-Reymond, on *actio in distans*, 275; and union of force and matter, 436 f.

Dühring, on quantity of the World-mass, 429.

Energy, physical conception of, 269 f., 278, 431 f.; as "kinetic and potential,"

278 f.: conservation and correlation of, 280 f., 283 f.; the chemical, 285 f.
Eucken, on hatred of metaphysics, 11.
Evolution, conception of, requires "time," 200 f.; as applied to the categories, 222 f.; biological doctrine of, 377 f., 379 f., 467 f., 470 f.
Experience, the cognitive, of Reality, 19 f., 57 f., 61 f., 63 f., 68 f., 84 f., 114 f., 143 f., 260 f.; unity of, 21 f.; relation of, to metaphysics, 28 f.

FARADAY, his conception of the atom, 442 f.
Final Purpose, conception of, in metaphysics, 363 f., 384 f.; differences of position regarding, 363 f.; in the World's course, 366 f., 380 f., 390 f.; psychological genesis of, 369 f.; application of, to the Self, 370 f.; and to external Nature, 374 f., 376 f., 386 f., relation of biology to, 377 f.; objections to, 381 f.; relation to mechanism, 384 f.
Force, as a category, 94 f., 253 f., 263 f., 269 f., 407 f.; implied in the "occupancy" of space, 251 f.; and in all the categories, 253 f., 270 f.; origin of conception of, 255 f., 260 f., 273 f.; as "substantial causality," 261 f., 266; physical conception of, 264 f., 269 f., 280 f.; as implying unity, 270 f., 288 f., 407; distribution of, 272 f., 284 f.; as *actio in distans*, 274 f., 276 f.
Form, a category, 337 f.; genesis of conception of, 340; reality of, 346 f.; as applied to the Self, 347 f.; and to Things, 348 f.; as ideal, 350 f.
Freedom, in relation to the Absolute, 513 f.

GEOMETRY, the Euclidean, 304 f., 308 f., 311 f.; the modern, 315 f.; dependence of, on number, 318 f.
Goethe, on the mystery of nature, 45.
Gravity, the conception of, 277 f.

HÆCKEL, on protoplasm, 467 f.
Hegel, his theory of the categories, 85, 88, 94.
Heraclitus, his principle of Becoming, 140.
Hodgson, on conception of metaphysics, 17.
Hume, his view of metaphysics, 2, 12 f.
Huygens, on conservation of energy, 280.

IDEA, as immanent in reality, 155 f., 340 f., 350 f., 354 f., 356 f.; forms and laws imply the category of, 341 f., 351 f.; the moral, 391 f.; actuality of the, 473 f., 477 f., 483 f.
Idealism, ontology of, 245 f., 473 f., 477 f., 483 f., 488 f.
Identity, of things, 155 f.; and of Self, 156 f.; as applied to the Absolute, 500 f., 524 f.
Inertia, physical conception of, 432 f.
Infinite, idea of, as applied to time, 202 f.

KANT, his views on metaphysics, 4 f., 26; and its method, 26; his conception of *Ding-an-Sich*, 44 f., 103 f.; on the mystery of Nature, 45; metaphysics of his "categorical imperative," 59 f.; his doctrine of the categories, 84 f., 98 f., 102, 163 f.; and of the unity of the world, 102 f.; his treatment of relation, 163 f.; of space and time, 181 f., 203 f., 219 f.; and the mathematical conceptions, 299, 310, 312, 331; on the laws of nature, 346, 361; his treatment of final purpose, 373 f., 376 f., 386 f., 389 f.
Knowledge, always ontological, 10 f., 19 f., 57 f., 58, 68 f., 84 f., 124 f.; as interpretative, 22 f.; and involving all the categories, 86 f., 99 f.; of the related, 165 f., 172 f.

LAW, a category, 337 f., 359 f.; so-called "reign" of, 339 f. 359 f., 361; genesis of conception of, 340 f.; as applied to Self, 347 f.; and to Things, 349 f., 361.
Leibnitz, on conservation of energy, 280.
Lewes, on conception of force, 437.
Life, metaphysical conception of, 460 f.; biological view of, 462 f., 464 f.
Lotze, his definition of the actual, 62 f.; on the ground of cognition, 114; his conception of time, 186, 206; and of space, 221; and of force, 288, 437; on the reconciliation of mechanism and Idea, 388 f.

MASS, physical conception of, 424 f.; psychological genesis of, 426 f.; as measurable quantity, 427 f.
Materialism, 420 f., 448 f., 453 f.
Matter, conception of, in metaphysics, 419 f., 422, 423 f., 429 f., 437, 439 f.; materialistic view of, 420 f., 448 f.; physicist's conception of, 423 f., 432 f., 446 f.; essential properties of, 424 f., 446 f.; involves energy, 431 f., 438 f.; yet is inert, 432 f., 438; origin of, in experience, 435 f.; as a substrate, 438 f., 446 f., 449, 460 f., 466 f.; with qualitatively different elements, 442 f., 444 f.; not mere centres of force, 442 f.; insufficiency of the conception, 453 f.
Measure (see Quantity).

Metaphysics, the justification of, 1 f., 6 f., 10 f., 19 f., 108 f.; Hume's view of, 2; Kant's view of, 4 f.; Hegel's view of, 6; the, of ordinary consciousness, 7 f.; objections to, 9 f., 13 f.; the conception of, 16 f., 19 f.; its functions, 21 f.; the method of, 24 f., 28 f.
Mill, John Stuart, on the conception of substance, 120 f., 128 f.
Mohr, on *actio in distans*, 275.
Motion, as actual, 226 f., 233 f., 240 f., 251 f.; Trendelenburg's theory of, 226; universality of, 233 f., 242 f.; sensation-complexes of, 234 f.; as absolute and relative, 240 f.; as ultimate fact, 251 f.

NATURE, conception of, 45, 359 f., 452 f., as a mechanism, 386 f., 468 f.; as personified, 453 f., 456 f., 486 f.; and an Absolute Whole, 456 f., 471 f.; or Infinite Spirit, 458 f., 468 f., 486 f.; an Ideal, 487 f.
Newcomb, Prof. S., his conception of "Force," 268; of energy, 269; and of space, 304.
Newton, on the definition of "Force," 268; and *actio in distans*, 274; his conception of gravity, 277 f., and of "Matter," 277, 282.
Number, conception of, as related to Quantity, 298 f., 324; science of, 318 f., 330 f.; its essence is in counting, 319 f., 322 f., 325 f.; psychological origin of, 319 f., 321 f.; as applied to reality, 325 f.

PARMENIDES, his conception of Nature, 454 f.
Paulsen, his conception of the categories, 222 f., 228.
Phenomenon, in contrast with the actual, 34 f., 42 f., 46, 54; origin of conception of, 35 f., 37 f., 48; as applied to the Self, 39 f., 42 f., 48; and to Things, 50 f.
Philosophy, nature of, 3 f., 108.
Physics, the metaphysics of, 264 f.; as science of dynamics, 265 f.
Poisson, M., definition of inertia, 434 f.
Property, conception of, as applied to Things, 72 f.

QUALITY, of things, 111 f., 133 f., not separable from things, 133 f.; implies relation, 135 f.
Quantity, conception of, as applied to Reality, 285 f., 297 f., 317; scientific use of, 294, 301 f., 307 f., 316 f.; origin of conception of, 299 f.; as relative, 305 f.

REALITY, as involved in experience, 8 f., 49 f., 61 f., 67 f., 84 f., 88 f., 91 f., 124 f., 170 f., 201 f., 260 f., 408 f., 413 f., 475 f.; not an abstraction, 18 f., 170 f.; as cause of phenomena, 49 f., 254 f.; conception of, analyzed, 57 f., 60 f., 68 f., 76 f., 84 f., 394 f.; not mere process, 76; nor mere law, 76 f.; nor mere content of consciousness, 77 f.; nor inscrutable essence, 78; nor merely negative, 79 f.; as fact, 81; as agent, 81 f.; as agreement with law, 82; as harmony of the categories, 84 f., 91 f., 99 f., 107 f.; not the Unrelated, 105 f., 164 f., 170 f., 201 f., 307, 497 f.; as "in space and time," 178 f., 207 f., 235, 237 f., 408 f.; necessarily dynamical, 254 f.; and implying force, 260 f., 289 f., 293, 367; and forms and laws, 343 f., 347 f.; and final purpose, 367 f.; doctrine of spheres of, 394 f., 401 f., 408 f.; as a Spiritual Life, 408 f., 417 f., 449 f.; and a Unity, 413, 414 f.; and an Idea, 475 f.
Relation as "mother" of the categories, 160 f.; general nature of, 162 f.; Kant's treatment of, 163 f.; meaning of, in reality, 164 f., 170 f., 174 f.; knowledge of, 165 f.; as applied to the Absolute, 170 f.; to the Self, 172 f.; applied to things in space and time, 201 f.
Ribot, view of metaphysics, 17.
Riehl, on sources of metaphysics, 29; conception of reality, 74; and of quantity, 428.
Rosmini, his conception of philosophy, 17.
Royce, Prof., the basis of metaphysics, 20.

SCHELLING, on final purpose in nature, 374; his conception of matter, 440.
Schopenhauer, on the principles of "individuation," 132, 214 f.; on space, 214 f.; on the world as Idea, 346; his "Will-to-live," 377 f.
Science, objections of, to metaphysics, 9 f.
Segner, as quoted by Kant, 45.
Self, conception of, in metaphysics, 31 f., 121 f., 143 f., 209 f., 231, 395 f., 409 f., 412 (and *passim*); development of conception of, 36 f., 41 f., 404, 406 f.; as a "phenomenon," 39 f.; and subject of change, 143 f., 145 f., 215 f.; but self-relating, 172 f.; as existent in time, 201 f., 212 f.; yet "absolute," 209 f., 397 f.; as existent in space, 216 f., 219 f.; and an active principle, 231; the Absolute Self, 397 f., 405 f., 489 f.; and as Spirit, 400 f., 408 f., 458 f.; varying conceptions of, 408 f.; the actuality of, 481 f.

Space, reality as "being in," 88 f., 178 f., 214 f., 249 f.; occupation of, by things, 90 f., 251 f.; considered as a "medium." 178 f., 215; Kantian conception of, 181 f., 214 f.; as principle of differentiation, 214 f., 218 f., 225 f., 238, 245 f.; real nature of, 216 f., 227 f., 233 f.; ethical and social bearings of the category of, 216 f.; as applied to the Self, 216 f., 219 f., 222 f., 224 f.; development of concept of, 229 f.; reality of 234 f., 242 f., 311; as assumed in chemistry, 243 f.; divisibility of, 247 f.; dimensions of, 248 f.

Spencer, Herbert, his philosophy ontological, 6; conception of reality, 73 f.; and of force, 437.

Spirit, as the "essence" of the Self, 400 f., 407 f., 457 f.; and of the Being of the World, 414 f., 418, 457, 460 f.; the Infinite, 458 f.

Substantiality, metaphysical use of, 73, 111 f., 128 f.; conception of, as applied to things, 117 f., 128 f.; as applied to Self, 136.

Teichmüller, on relations of metaphysics to experience, 28; on problem of reality, 74; and concept of substance, 127 f.; and of space, 231; on meaning of interaction, 358.

Teleology (see "Final Purpose").

Theory of Reality, the goal of metaphysical system, 29 f., 75, 109 f., 522 f.; practical benefits of, 32 f.; limitations of, 522 f.

Thing, development of conception of, 36 f., 112 f.; as a reality, 50 f., 64 f., 68 f., 130 f.; involves the harmony of the categories, 64 f., 84 f., 232; knowledge of, and of Self, 69 f., 401 f.; properties of a, 72 f., 113 f., 401 f., 447 f.; as substance and qualities, 113 f., 117 f., 123 f., 130 f.; and subject to change, 143 f.; an existence in space, 225 f., 232 f., 234 f.; implies forms and laws, 343 f., 347 f.; and final purpose, 368 f., 375 f.; essential self-hood of, 401 f.; although of inferior order, 403 f., 414 f., 447 f.

Thomson, Sir Wm., his conception of Force, 267; and of Matter, 423, 445.

Time, considered as a "medium," 178 f., 209 f.; origin of consciousness of, 184 f., 187 f.; actuality of, 186 f., 189 f., 191 f., 209 f.; assumptions involved in category of, 195 f., 203 f., 207 f.; infinity of, 202 f.

Trendelenburg, on the category of motion, 226.

Truth, its implicate of reality, 58 f.

Tyndall, on conservation of energy, 281; and nature of the atom, 448.

Unity, the, which Reality has, 100 f., 138 f., 176 f., 329 f., 333 f., 359 f., 413 f.; of the categories, 105 f., 132 f.; as a system of relations, 176 f., 335 f.; nature of the conception of, 333 f.

Uphues, on nature of a Thing, 95 f.

Volkmann, on development of space-consciousness, 231 f.; and conception of quantity, 301; on genesis of the idea of end, 369.

Ward, on the concept of space, 231; and of unity, 323.

Watson, Prof., on conception of Force, 437.

Will, as the reality of things, 70 f., 123 f., 132 f., 289 f., 439 f., 506 f., 513 f.

Williams, Prof. H. S., on heredity, 471.

World, the, as existent in time, 195 f., 198 f., 204 f., 207 f.; conception of, space-wise, 249 f.; as a unity of force, 254 f., 293, 413 f., 517; as Absolute Self, 405 f., 411 f., 493 f., 501 f., 517 f., 527; as a Subject, 501 f., 506 f.

World-Ground, conception of Life applied to the, 204 f., 250 f., 408 f.; the Absolute as the, 493 f., 506 f., 512 f., 523 f., 527 f.

Wundt, his analysis of an object-thing, 117 f.; on category of relation, 167 f., 291.; and of force, 261 f.; on the conception of matter, 422, 445; and of Infinite Spirit, 458.

A Classified Catalogue

OF WORKS IN

GENERAL LITERATURE

PUBLISHED BY

LONGMANS, GREEN, & CO.

39 PATERNOSTER ROW, LONDON, E.C.

91 AND 93 FIFTH AVENUE NEW YORK. AND 32 HORNBY ROAD, BOMBAY.

CONTENTS.

	PAGE
BADMINTON LIBRARY (THE)	10
BIOGRAPHY, PERSONAL MEMOIRS, &c.	7
CHILDREN'S BOOKS	25
CLASSICAL LITERATURE TRANSLATIONS, ETC.	18
COOKERY, DOMESTIC MANAGEMENT, &c.	28
EVOLUTION, ANTHROPOLOGY, &c.	17
FICTION, HUMOUR, &c.	21
FUR, FEATHER AND FIN SERIES	12
HISTORY, POLITICS, POLITY, POLITICAL MEMOIRS, &c.	3
LANGUAGE, HISTORY AND SCIENCE OF	16
LONGMANS' SERIES OF BOOKS FOR GIRLS	26
MANUALS OF CATHOLIC PHILOSOPHY	16
MENTAL, MORAL, AND POLITICAL PHILOSOPHY	14
MISCELLANEOUS AND CRITICAL WORKS	29
MISCELLANEOUS THEOLOGICAL WORKS	32
POETRY AND THE DRAMA	19
POLITICAL ECONOMY AND ECONOMICS	16
POPULAR SCIENCE	24
SILVER LIBRARY (THE)	27
SPORT AND PASTIME	10
STUDIES IN ECONOMICS AND POLITICAL SCIENCE	17
TRAVEL AND ADVENTURE, THE COLONIES, &c.	8
VETERINARY MEDICINE, &c.	10
WORKS OF REFERENCE	25

INDEX OF AUTHORS AND EDITORS.

	Page
Abbott (Evelyn)	3, 18
—— (T. K.)	14
—— (E. A.)	14
Acland (A. H. D.)	3
Acton (Eliza)	28
Adeane (J. H.)	7
Æschylus	18
Ainger (A. C.)	11
Albemarle (Earl of)	10
Allen (Grant)	24
Allingham (F.)	21
Amos (S.)	3
André (R.)	12
Anstey (F.)	21
Archer (W.)	8
Aristophanes	18
Aristotle	14, 18
Armstrong (G. F. Savage)	19
—— (E. J. Savage)	7, 19, 29
Arnold (Sir Edwin)	8, 19
—— (Dr. T.)	3
Ashbourne (Lord)	3
Ashby (H.)	28
Ashley (W. J.)	16
Atelier du Lys (Authorof)	29
Ayre (Rev. J.)	25
Bacon	7, 14
Baden-Powell (B. H.)	3
Bagehot (W.)	7, 16, 29
Bagwell (R.)	3
Bain (Alexander)	14
Baker (Sir S. W.)	8, 10
Balfour (A. J.)	11, 32
Ball (John)	8
—— (J. T.)	3
Baring-Gould (Rev. S.)	27, 29
Barraud (C. W.)	19
Baynes (T. S.)	29
Beaconsfield (Earl of)	21
Beaufort (Duke of)	10, 11
Becker (W. A.)	18
Beddard (F. E.)	24
Beesly (A. H.)	7
Bell (Mrs. Hugh)	19
—— (Mrs. Arthur)	7
Bent (J. Theodore)	8
Besant (Sir Walter)	3
Bickerdyke (J.)	11
Bicknell (A. C.)	8
Bird (R.)	32
Birt (A.)	21
Bland (Mrs. Hubert)	20
Boase (Rev. C. W.)	4
Boedder (Rev. B.)	16
Boevey (A. W. Crawley-)	7
Bosanquet (B.)	14
Boyd (Rev. A. K. H.)	29, 32
Brassey (Lady)	9
—— (Lord)	3, 8, 11, 16
Bray (C. and Mrs.)	14
Bright (Rev. J. F.)	3
Broadfoot (Major W.)	10
Browning (H. Ellen)	9
Buck (H. A.)	11
Buckland (Jas.)	25
Buckle (H. T.)	3
Buckton (C. M.)	28
Bull (T.)	28
Burke (U. R.)	3
Burrows (Montagu)	4
Butler (E. A.)	24
—— (Samuel)	18, 29
Cameron of Lochiel	12
Campbell (Rev. Lewis)	32
Camperdown (Earl of)	7
Cannan (E.)	17
Channing (F. A.)	16
Chesney (Sir G.)	3
Cholmondeley-Pennell (H.)	11
Churchill (W. Spencer)	9
Cicero	18
Clarke (Rev. R. F.)	16
Climenson (Emily J.)	8
Clodd (Edward)	17
Clutterbuck (W. J.)	9
Coleridge (S. T.)	19
Comparetti (D.)	30
Comyn (L. N.)	26
Conington (John)	18
Conway (Sir W. M.)	11
Conybeare (Rev. W. J.) & Howson (Dean)	27
Coolidge (W. A. B.)	8
Corbett (Julian S.)	3
Corder (Annie)	19
Coutts (W.)	18
Coventry (A.)	11
Cox (Harding)	10
Crake (Rev. A. D.)	25
Creighton (Bishop)	3, 4
Crozier (J. B.)	7, 14
Cuningham (G. C.)	3
Curzon of Kedleston (Lord)	3
Custance (Col. H.	12
Cutts (Rev. E. L.)	4
Dallinger (F. W.)	4
Davidson (W. L.)	14, 16, 32
Davies (J. F.)	18
Deland (Mrs)	21, 26
Dent (C. T.)	11
Deploige (S.)	17
De Salis (Mrs.)	28, 29
De Tocqueville (A.)	3
Devas (C. S.)	16
Dickinson (G. L.)	4
Diderot	21
Dougall (L.)	21
Douglas (Sir G.)	19
Dowden (E.)	31
Doyle (A. Conan)	21

INDEX OF AUTHORS AND EDITORS—*continued.*

Page

Dreyfus (Irma) - 30
Du Bois (W. E. B.) - 4
Dufferin (Marquis of) 11
Dunbar (Mary F.) - 20

Eardley-Wilmot (Capt. S.) - - - 8
Ebrington (Viscount) 12
Ellis (J. H.) - - 12
—— (R. L.) - - 14
Evans (Sir John) - 30

Farrar (Dean) - - 16, 21
Fitzwygram (Sir F.) 10
Folkard (H. C.) - 12
Ford (H.) - - - 12
Fowler (Edith H.) - 21
Foxcroft (H. C.) - 7
Francis (Francis) - 12
Freeman (Edward A.) 4
Freshfield (D. W.) - 11
Frothingham (A. L.) 30
Froude (James A.) 4, 7, 9, 21
Furneaux (W.) - 24

Galton (W. F.) - 17
Gardiner (Samuel R.) 4
Gathorne-Hardy (Hon. A. E.) - - 12
Gerard (Dorothea) - 26
Gibbons (J. S.) - 12
Gibson (Hon. H.) - 13
—— (C. H.) - - 14
—— (Hon. W.) - 32
Gilkes (A. H.) - - 21
Gleig (Rev. G. R.) - 8
Goethe - - - - 19
Gore-Booth (Eva) - 19
—— (Sir H. W.) - 11
Graham (P. A.) - 13, 21
—— (G. F.) - - 16
Granby (Marquis of) 12
Grant (Sir A.) - - 14
Graves (R. P.) - - 7
Green (T. Hill) - 14
Greene (E. B.) - - 4
Greville (C. C. F.) - 4
Grey (Maria) - 26
Grose (T. H.) - - 14
Gross (C.) - - - 4
Grove (F. C.) - - 11
—— (Mrs. Lilly) - 10
Gurdon (Lady Camilla) 21
Gwilt (J.) - - - - 25

Haggard (H. Rider) 21, 22
Hake (O.) - - - - 11
Halliwell-Phillipps (J.) 8
Hamlin (A. D. F.) - 30
Hammond (Mrs. J. H.) 4
Harding (S. B.) - 4
Harte (Bret) - - 22
Harting (J. E.) - - 12
Hartwig (G.) - - 24
Hassall (A.) - - 6
Haweis (Rev. H. R.) 7, 30
Heath (D. D.) - - 14
Heathcote (J. M. and C. G.) - - - 11
Helmholtz (Hermann von) - - - 24
Henderson (Lieut.-Col. G. F.) - 7
Henry (W.) - - 11
Henty (G. A.) - - 26
Herbert (Col. Kenney) 12
Hewins (W. A. S.) - 17
Hiley (R. W.) - - 7
Hill (Sylvia M.) - 21
Hillier (G. Lacy) - 10
Hime (Lieut.-Col. H. W. L.) - - 30
Hodgson (Shadworth H.) 14
Holroyd (Maria J.) - 7
Homer - - - - 18
Hope (Anthony) - 22
Horace - - - - 18
Hornung (E. W.) - 22
Houston (D. F.) - 4
Howell (G.) - - 16
Howitt (W.) - - 9
Hudson (W. H.) - 24
Hullah (J.) - - 30

Page

Hume (David) - - 14
Hunt (Rev. W.) - 4
Hunter (Sir W.) - 5
Hutchinson (Horace G.) 11, 13

Ingelow (Jean - 19, 26

James (W.) - - 14
Jefferies (Richard) - 30
Jekyll (Gertrude) - 30
Jerome (Jerome K.) - 22
Johnson (J. & J. H.) 30
Jones (H. Bence) - 25
Jordan (W. L.) - 16
Jowett (Dr. B.) - 17
Joyce (P. W.) - 5, 22, 30
Justinian : - - 14

Kant (I.) - - - 14
Kaye (Sir J. W.) - 5
Kerr (Rev. J.) - 11
Killick (Rev. A. H.) - 14
Kingsley (Rose G.) - 30
Kitchin (Dr. G. W.) 4
Knight (E. F.) - - 9, 11
Köstlin (J.) - - 7

Ladd (G. T.) - - 15
Lang (Andrew) 5, 10, 11, 13, 17, 18, 19, 20, 22, 26, 30, 32
Lascelles (Hon. G.) 10, 11, 12
Laughton (J. K.) - 8
Lawley (Hon. F.) - 11
Lawrence (F. W.) - 17
Layard (Nina F.) - 19
Leaf (Walter) - - 31
Lear (H. L. Sidney) - 29
Lecky (W. E. H.) - 5, 19
Lees (J. A.) - - 9
Lejeune (Baron) - 7
Leslie (T. E. Cliffe) - 16
Levett-Yeats (S.) - 22
Lillie (A.) - - - 13
Lindley (J.) - - 25
Lodge (H. C.) - - 4
Loftie (Rev. W. J.) - 4
Longman (C. J.) 10, 12, 30
—— (F. W.) - - 13
—— (G. H.) - - 11, 12
Lowell (A. L.) - - 5
Lubbock (Sir John) - 17
Lucan - - - - 18
Lutoslawski (W.) - 15
Lyall (Edna) - - 22
Lyttelton (Hon. R. H.) 10
—— (Hon. A.) - - 11
Lytton (Earl of) - 19

Macaulay (Lord) 5, 6, 19
MacColl (Canon) - 6
Macdonald (G.) - 9
—— (Dr. G.) - - 20, 32
Macfarren (Sir G. A.) 30
Mackail (J. W.) - 8, 18
Mackinnon (J.) - 6
Macleod (H. D.) - 16
Macpherson (Rev. H. A.) 12
Madden (D. H.) - 13
Maher (Rev. M.) - 16
Malleson (Col. G. B.) 5
Mann (E. E.) - - 29
Marbot (Baron de) - 7
Marquand (A.) - - 30
Marshman (J. C.) - 7
Martineau (Dr. James) 32
Maskelyne (J. N.) - 13
Maunder (S.) - - 25
Max Müller (F.) 7, 8, 15, 16, 22, 30, 32
—— (Mrs.) - - - 9
May (Sir T. Erskine) 6
Meade (L. T.) - - 26
Melville (G. J. Whyte) 22
Merivale (Dean) - 6
Merriman (H. S.) - 22
Mill (James) - - 15
—— (John Stuart) - 15, 17
Milner (G.) - - - 31
Miss Molly (*Author of*) 26
Moffat (D.) - - 13
Molesworth (Mrs.) - 26

Page

Monck (W. H. S.) - 15
Montague (F. C.) - 6
Montagu (Hon. John Scott) - - 12
Moon (G. W.) - - 20
Moore (T.) - - - 25
—— (Rev. Edward) - 14
Morgan (C. Lloyd) - 17
Morris (W.) - 20, 22, 31
—— (Mowbray) - 11
Mulhall (M. G.) - 17

Nansen (F.) - - 9
Nesbit (E.) - - 20
Nettleship (R. L.) - 14
Newman (Cardinal) - 22

Ogle (W.) - - - 18
Oliphant (Mrs.) - 22
Oliver (W. D.) - 9
Onslow (Earl of) - 11
Orchard (T. N.) - 31
Osbourne (L) - - 23

Palgrave (Gwenllian F.) 8
Park (W.) - - 13
Parr (Louisa) - - 26
Payne-Gallwey (Sir R.) - - - 11, 13
Peek (Hedley) - - 11
Pembroke (Earl of) - 11
Phillipps-Wolley (C.) 10, 22
Pitman (C. M.) - 11
Pleydell-Bouverie (E. O.) 11
Pole (W.) - - - 13
Pollock (W. H.) - 11
Poole (W. H. and Mrs.) 29
Poore (G. V.) - - 31
Potter (J.) - - 16
Praeger (S. Rosamond) 26
Prevost (C.) - - 11
Pritchett (R. T.) - 11
Proctor (R. A.) 13, 24, 28

Quill (A. W.) - - 18

Raine (Rev. James) - 4
Ransome (Cyril) - 3, 6
Rauschenbusch-Clough (Emma) - - 8
Rawlinson (Rev. Canon) 8
Reader (Emily E.) - 23
Rhoades (J.) - - 18
Rhoscomyl (O.) - 23
Ribblesdale (Lord) - 13
Rich (A.) - - - 18
Richardson (C.) - 12
Richman (I. B.) - 6
Richmond (Ennis) - 31
Richter (J. Paul) - 31
Rickaby (Rev. John) 16
—— (Rev. Joseph) - 16
Ridley (Sir E.) - - 18
Riley (J. W.) - - 20
Roget (Peter M.) - 16, 25
Romanes (G. J.) 8, 15, 17, 20, 32
—— (Mrs.) - - 8
Ronalds (A.) - - 13
Roosevelt (T.) - - 4
Rossetti (Maria Francesca) - - - 31
—— (W. M.) - - 20
Rowe (R. P. P.) - 11
Russell (Bertrand) - 17
—— (Alys) - - 17
—— (Rev. M.) - - 20

Saintsbury (G.) - 12
Samuels (E.) - - 20
Sandars (T. C.) - 14
Sargent (A. J.) - - 17
Schreiner (S. C. Cronwright) - - 10
Seebohm (F.) - - 6, 8
Selous (F. C.) - - 10
Sewell (Elizabeth M.) 23
Shadwell (A.) - - 31
Shakespeare - - 20
Shand (A. I.) - - 12
Sharpe (R. R.) - - 6
Shearman (M.) - 10, 11
Sinclair (A.) - - 11
Smith (R. Bosworth) 6

Page

Smith (T. C.) - - 4
Smith (W. P. Haskett) 9
Solovyoff (V. S.) - 31
Sophocles - - 18
Soulsby (Lucy H.) 26, 31
Spedding (J.) - - 7, 14
Sprigge (S. Squire) - 8
Stanley (Bishop) - 24
Stebbing (W.) - - 23
Steel (A. G.) - - 10
—— (J. H.) - - 10
Stephen (Leslie) - 9
Stephens (H. Morse) 6
Stevens (R. W.) - 31
Stevenson (R. L.) - 23, 26
'Stonehenge' - - 10
Storr (F.) - - - 14
Stuart-Wortley (A. J.) 11, 12
Stubbs (J. W.) - - 6
Suffolk & Berkshire (Earl of) - - 11
Sullivan (Sir E.) - 11
—— (J. F.) - - 26
Sully (James) - - 15
Sutherland (A. and G.) 6
—— (Alex.) - - 15, 31
Suttner (B. von) - 23
Swinburne (A. J.) - 15
Symes (J. E.) - - 17

Tacitus - - - 18
Taylor (Meadows) - 6
—— (Una) - - 23
Tebbutt (C. G.) - 11
Thornhill (W. J.) - 18
Todd (A.) - - - 6
Toynbee (A.) - - 17
Trevelyan (Sir G. O.) 6, 7
—— (C. P.) - - 17
—— (G. M.) - - 6
Trollope (Anthony) - 23
Tupper (C. L.) - - 20
Turner (H. G.) - 31
Tyndall (J.) - - 7, 9
Tyrrell (R. Y.) - - 18
Tyszkiewicz (M.) - 31

Upton (F. K. and Bertha) 26

Van Dyke (J. C.) - 31
Verney (Frances P. and Margaret M.) 8
Virgil - - - 18
Vivekananda (Swami) 32
Vivian (Herbert) - 9

Wakeman (H. O.) - 6
Walford (L. B.) - 23
Walker (Jane H.) - 29
Wallas (Graham) - 8
Walpole (Sir Spencer) 6
Walrond (Col. H.) - 10
Walsingham (Lord) - 11
Walter (J.) - - 8
Warwick (Countess of) 31
Watson (A. E. T.) 10, 11, 12, 13, 23
Webb (Mr. and Mrs. Sidney) - - 17
—— (T. E.) - - 15, 19
Weber (A.) - - 15
Weir (Capt. R.) - 11
Weyman (Stanley) - 23
Whately (Archbishop) 14, 15
—— (E. Jane) - - 16
Whishaw (F.) - - 23
White (W. Hale) - 20, 31
Whitelaw (R.) - - 18
Wilcocks (J. C.) - 13
Wilkins (G.) - - 18
Willard (A. R.) - 31
Willich (C. M.) - 25
Witham (T. M.) - 11
Wood (Rev. J. G.) - 25
Wood-Martin (W. G.) 6
Woods (Margaret L.) 23
Wordsworth (Elizabeth) 26
—— (William) - - 20
Wyatt (A. J.) - - 20
Wylie (J. H.) - - 6

Youatt (W.) - - 10

Zeller (E.) - - 15

History, Politics, Polity, Political Memoirs, &c.

Abbott.—*A History of Greece.* By Evelyn Abbott, M.A., LL.D.
Part I.—From the Earliest Times to the Ionian Revolt. Crown 8vo., 10s. 6d.
Part II.—500-445 B.C. Crown 8vo., 10s. 6d.

Acland and Ransome.—*A Handbook in Outline of the Political History of England to* 1896. Chronologically Arranged. By the Right Hon. A. H. Dyke Acland, and Cyril Ransome, M.A. Crown 8vo., 6s.

Amos.—*Primer of the English Constitution and Government.* For the Use of Colleges, Schools, and Private Students. By Sheldon Amos, M.A. Cr. 8vo., 6s.

ANNUAL REGISTER (THE). A Review of Public Events at Home and Abroad, for the year 1898. 8vo., 18s.
Volumes of the *Annual Register* for the years 1863-1897 can still be had. 18s. each.

Arnold.—*Introductory Lectures on Modern History.* By Thomas Arnold, D.D., formerly Head Master of Rugby School. 8vo., 7s. 6d.

Ashbourne.—*Pitt: Some Chapters on His Life and Times.* By the Right Hon. Edward Gibson, Lord Ashbourne, Lord Chancellor of Ireland. With 11 Portraits. 8vo., 21s.

Baden-Powell.—*The Indian Village Community.* Examined with Reference to the Physical, Ethnographic, and Historical Conditions of the Provinces; chiefly on the Basis of the Revenue-Settlement Records and District Manuals. By B. H. Baden-Powell, M.A., C.I.E. With Map. 8vo., 16s.

Bagwell.—*Ireland under the Tudors.* By Richard Bagwell, LL.D. (3 vols.) Vols. I. and II. From the first invasion of the Northmen to the year 1578. 8vo., 32s. Vol. III. 1578-1603. 8vo., 18s.

Ball.—*Historical Review of the Legislative Systems operative in Ireland,* from the Invasion of Henry the Second to the Union (1172-1800). By the Rt. Hon. J. T. Ball. 8vo., 6s.

Besant.—*The History of London.* By Sir Walter Besant. With 74 Illustrations. Crown 8vo., 1s. 9d. Or bound as a School Prize Book, 2s. 6d.

Brassey (Lord).—Papers and Addresses.
Naval and Maritime. 1872-1893. 2 vols. Crown 8vo., 10s.

Brassey (Lord) Papers and Addresses—*continued.*
Mercantile Marine and Navigation, from 1871-1894. Crown 8vo., 5s.
Imperial Federation and Colonisation from 1880-1894. Cr. 8vo., 5s.
Political and Miscellaneous. 1861-1894. Crown 8vo., 5s

Bright.—*A History of England.* By the Rev. J. Franck Bright, D.D.
Period I. *Mediæval Monarchy:* A.D. 449-1485. Crown 8vo., 4s. 6d.
Period II. *Personal Monarchy.* 1485-1688. Crown 8vo., 5s.
Period III. *Constitutional Monarchy.* 1689-1837. Crown 8vo., 7s. 6d.
Period IV. *The Growth of Democracy.* 1837-1880. Crown 8vo., 6s.

Buckle.—*History of Civilisation in England, France, Spain, and Scotland.* By Henry Thomas Buckle. 3 vols. Crown 8vo., 24s.

Burke.—*A History of Spain* from the Earliest Times to the Death of Ferdinand the Catholic. By Ulick Ralph Burke, M.A. 2 vols. 8vo., 32s.

Chesney.—*Indian Polity:* a View of the System of Administration in India. By General Sir George Chesney, K.C.B. With Map showing all the Administrative Divisions of British India. 8vo., 21s.

Corbett.—*Drake and the Tudor Navy,* with a History of the Rise of England as a Maritime Power. By Julian S. Corbett. With Portraits, Illustrations and Maps. 2 vols. 8vo., 36s.

Creighton.—*A History of the Papacy from the Great Schism to the Sack of Rome,* 1378-1527. By M. Creighton, D.D., Lord Bishop of London. 6 vols. Crown 8vo., 6s. each.

Cuningham.—*A Scheme for Imperial Federation:* a Senate for the Empire. By Granville C. Cuningham, of Montreal, Canada. With an Introduction by Sir Frederick Young, K.C.M.G. Crown 8vo., 3s. 6d.

Curzon.—*Persia and the Persian Question.* By the Right Hon. Lord Curzon of Kedleston. With 9 Maps, 96 Illustrations, Appendices, and an Index. 2 vols. 8vo., 42s.

De Tocqueville.—*Democracy in America.* By Alexis de Tocqueville. Translated by Henry Reeve, C.B., D.C.L. 2 vols. Crown 8vo., 16s.

History, Polities, Polity, Political Memoirs, &c.—*continued.*

Dickinson.—*The Development of Parliament during the Nineteenth Century.* By G. Lowes Dickinson, M.A. 8vo., 7*s.* 6*d.*

Froude (James A.).

The History of England, from the Fall of Wolsey to the Defeat of the Spanish Armada.

Popular Edition. 12 vols. Crown 8vo., 3*s.* 6*d.* each.

'Silver Library' Edition. 12 vols. Crown 8vo., 3*s.* 6*d.* each.

The Divorce of Catherine of Aragon. Crown 8vo., 3*s.* 6*d.*

The Spanish Story of the Armada, and other Essays. Cr. 8vo., 3*s.* 6*d.*

The English in Ireland in the Eighteenth Century. 3 vols. Cr. 8vo., 10*s.* 6*d.*

English Seamen in the Sixteenth Century. Cr. 8vo., 6*s.*

The Council of Trent. Crown 8vo., 3*s.* 6*d.*

Short Studies on Great Subjects. 4 vols. Cr. 8vo., 3*s.* 6*d.* each.

Cæsar: a Sketch. Cr. 8vo, 3*s.* 6*d.*

Gardiner (Samuel Rawson, D.C.L., LL.D.).

History of England, from the Accession of James I. to the Outbreak of the Civil War, 1603-1642. 10 vols. Crown 8vo., 6*s.* each.

A History of the Great Civil War, 1642-1649. 4 vols. Cr. 8vo., 6*s.* each.

A History of the Commonwealth and the Protectorate. 1649-1660. Vol. I. 1649-1651. With 14 Maps. 8vo., 21*s.* Vol. II. 1651-1654. With 7 Maps. 8vo., 21*s.*

What Gunpowder Plot Was. With 8 Illustrations. Crown 8vo., 5*s.*

Cromwell's Place in History. Founded on Six Lectures delivered in the University of Oxford. Cr. 8vo., 3*s.* 6*d.*

Gardiner (Samuel Rawson, D.C.L., LL.D.)—*continued.*

The Student's History of England. With 378 Illustrations. Crown 8vo., 12*s.*

Also in Three Volumes, price 4*s.* each.

Vol. I. B.C. 55—A.D. 1509. 173 Illustrations.

Vol. II. 1509-1689. 96 Illustrations.

Vol. III. 1689-1885. 109 Illustrations.

Greville.—*A Journal of the Reigns of King George IV., King William IV., and Queen Victoria.* By Charles C. F. Greville, formerly Clerk of the Council. 8 vols. Crown 8vo., 3*s.* 6*d.* each.

HARVARD HISTORICAL STUDIES.

The Suppression of the African Slave Trade to the United States of America, 1638-1870. By W. E. B. Du Bois, Ph.D. 8vo., 7*s.* 6*d.*

The Contest over the Ratificaton of the Federal Constitution in Massachusetts. By S. B. Harding, A.M. 8vo., 6*s.*

A Critical Study of Nullification in South Carolina. By D. F. Houston, A.M. 8vo., 6*s.*

Nominations for Elective Office in the United States. By Frederick W. Dallinger, A.M. 8vo., 7*s.* 6*d.*

A Bibliography of British Municipal History, including Gilds and Parliamentary Representation. By Charles Gross, Ph.D. 8vo., 12*s.*

The Liberty and Free Soil Parties in the North West. By Theodore C. Smith, Ph.D. 8vo, 7*s.* 6*d.*

The Provincial Governor in the English Colonies of North America. By Evarts Boutell Greene. 8vo., 7*s.* 6*d.*

*** *Other Volumes are in preparation.*

Hammond.—*A Woman's Part in a Revolution.* By Mrs. John Hays Hammond. Crown 8vo., 2*s.* 6*d.*

Historic Towns.—Edited by E. A. Freeman, D.C.L., and Rev. William Hunt, M.A. With Maps and Plans. Crown 8vo., 3*s.* 6*d.* each.

Bristol. By Rev. W. Hunt.
Carlisle. By Mandell Creighton, D.D.
Cinque Ports. By Montagu Burrows.
Colchester. By Rev. E. L. Cutts.
Exeter. By E. A. Freeman.
London. By Rev. W. J. Loftie
Oxford. By Rev. C. W. Boase.
Winchester. By G. W. Kitchin, D.D.
York. By Rev. James Raine.
New York. By Theodore Roosevelt.
Boston (U.S.) By Henry Cabot Lodge.

History, Politics, Polity, Political Memoirs, &c.—*continued.*

Hunter.—*A History of British India.* By Sir William Wilson Hunter, K.C.S.I., M.A., LL.D.; a Vice-President of the Royal Asiatic Society. In 5 vols. Vol. I.—Introductory to the Overthrow of the English in the Spice Archipelago, 1623. With 4 Maps. 8vo., 18*s.*

Joyce (P. W., LL.D.).

A Short History of Ireland, from the Earliest Times to 1603. Crown 8vo., 10*s.* 6*d.*

A Child's History of Ireland. From the Earliest Times to the Death of O'Connell. With specially constructed Map and 160 Illustrations, including Facsimile in full colours of an illuminated page of the Gospel Book of Mac-Durnan, A.D. 850. Fcp. 8vo., 3*s.* 6*d.*

Kaye and Malleson.—*History of the Indian Mutiny,* 1857-1858. By Sir John W. Kaye and Colonel G. B. Malleson. With Analytical Index and Maps and Plans. 6 vols. Crown 8vo., 3*s.* 6*d.* each.

Lang (Andrew).

Pickle the Spy: or, The Incognito of Prince Charles. With 6 Portraits. 8vo., 18*s.*

The Companions of Pickle: Being a Sequel to 'Pickle the Spy'. With 4 Plates. 8vo., 16*s.*

St. Andrews. With 8 Plates and 24 Illustrations in the Text by T. Hodge. 8vo., 15*s.* net.

Lecky (The Rt. Hon. William E. H.)

History of England in the Eighteenth Century.

Library Edition. 8 vols. 8vo. Vols. I. and II., 1700-1760, 36*s.*; Vols. III. and IV., 1760-1784, 36*s.*; Vols. V. and VI., 1784-1793, 36*s.*; Vols. VII. and VIII., 1793-1800, 36*s.*

Cabinet Edition. England. 7 vols. Crown 8vo., 6*s.* each. Ireland. 5 vols. Crown 8vo., 6*s.* each.

History of European Morals from Augustus to Charlemagne. 2 vols. Crown 8vo., 12*s.*

History of the Rise and Influence of the Spirit of Rationalism in Europe. 2 vols. Crown 8vo., 12*s.*

Democracy and Liberty.

Library Edition. 2 vols. 8vo., 36*s.*

Cabinet Edition. 2 vols. Cr. 8vo., 12*s.*

Lowell.—*Governments and Parties in Continental Europe.* By A. Lawrence Lowell. 2 vols. 8vo., 21*s.*

Macaulay (Lord).

The Life and Works of Lord Macaulay. 'Edinburgh' Edition. 10 vols. 8vo., 6*s.* each.

Complete Works.

'Albany' Edition. With 12 Portraits. 12 vols. Large Crown 8vo., 3*s.* 6*d.* each.

Vols. I.-VI. *History of England, from the Accession of James the Second.*

Vols. VII.-X. *Essays and Biographies.*

Vols. XI.-XII. *Speeches, Lays of Ancient Rome, etc., and Index.*

Library Edition. 8 vols. 8vo., £5 5*s.*

'Edinburgh' Edition. 8 vols. 8vo., 6*s.* each.

Cabinet Edition. 16 vols. Post 8vo., £4 16*s.*

History of England from the Accession of James the Second.

Popular Edition. 2 vols. Cr. 8vo., 5*s.*

Student's Edition. 2 vols. Cr. 8vo., 12*s.*

People's Edition. 4 vols. Cr. 8vo., 16*s.*

'Albany' Edition. With 6 Portraits. 6 vols. Large Crown 8vo., 3*s.* 6*d.* each.

Cabinet Edition. 8 vols. Post 8vo., 48*s.*

'Edinburgh' Edition. 4 vols. 8vo., 6*s.* each.

Library Edition. 5 vols. 8vo., £4.

Critical and Historical Essays, with Lays of Ancient Rome, etc., in 1 volume.

Popular Edition. Crown 8vo., 2*s.* 6*d.*

Authorised Edition. Crown 8vo., 2*s.* 6*d.*, or gilt edges, 3*s.* 6*d.*

'Silver Library' Edition. With Portrait and 4 Illustrations to the 'Lays'. Cr. 8vo., 3*s.* 6*d.*

Critical and Historical Essays.

Student's Edition. 1 vol. Cr. 8vo., 6*s.*

People's Edition. 2 vols. Cr. 8vo., 8*s.*

'Trevelyan' Edition. 2 vols. Cr. 8vo., 9*s.*

Cabinet Edition. 4 vols. Post 8vo., 24*s.*

'Edinburgh' Edition. 3 vols. 8vo., 6*s.* each.

Library Edition. 3 vols. 8vo., 36*s.*

Essays, which may be had separately, sewed, 6*d.* each; cloth, 1*s.* each.

Addison and Walpole.	Ranke and Gladstone.
Croker's Boswell's Johnson.	Milton and Machiavelli.
Hallam's Constitutional History.	Lord Byron.
Warren Hastings.	Lord Clive.
The Earl of Chatham (Two Essays).	Lord Byron, and The Comic Dramatists of the Restoration.
Frederick the Great.	

Miscellaneous Writings

People's Edition. 1 vol. Cr. 8vo., 4*s.* 6*d.*

Library Edition. 2 vols. 8vo., 21*s.*

History, Politics, Polity, Political Memoirs, &c.—*continued.*

Macaulay (LORD)—*continued.*

MISCELLANEOUS WRITINGS, SPEECHES AND POEMS.
Popular Edition. Crown 8vo., 2s. 6d.
Cabinet Edition. 4 vols. Post 8vo., 24s.

SELECTIONS FROM THE WRITINGS OF LORD MACAULAY. Edited, with Occasional Notes, by the Right Hon. Sir G. O. Trevelyan, Bart. Crown 8vo., 6s.

MacColl.—*THE SULTAN AND THE POWERS.* By the Rev. MALCOLM MACCOLL, M.A., Canon of Ripon. 8vo., 10s. 6d.

Mackinnon.—*THE UNION OF ENGLAND AND SCOTLAND: A STUDY OF INTERNATIONAL HISTORY.* By JAMES MACKINNON. Ph.D. Examiner in History to the University of Edinburgh. 8vo., 16s.

May.—*THE CONSTITUTIONAL HISTORY OF ENGLAND* since the Accession of George III. 1760-1870. By Sir THOMAS ERSKINE MAY, K.C.B. (Lord Farnborough). 3 vols. Cr. 8vo., 18s.

Merivale (CHARLES, D.D.), sometime Dean of Ely.

HISTORY OF THE ROMANS UNDER THE EMPIRE. 8 vols. Crown 8vo., 3s. 6d. each.

THE FALL OF THE ROMAN REPUBLIC: a Short History of the Last Century of the Commonwealth. 12mo., 7s. 6d.

GENERAL HISTORY OF ROME, from the Foundation of the City to the Fall of Augustulus, B.C. 753-A.D. 476. With 5 Maps. Crown 8vo, 7s. 6d.

Montague.—*THE ELEMENTS OF ENGLISH CONSTITUTIONAL HISTORY.* By F. C. MONTAGUE, M.A. Crown 8vo., 3s. 6d.

Ransome.—*THE RISE OF CONSTITUTIONAL GOVERNMENT IN ENGLAND.* By CYRIL RANSOME, M.A. Crown 8vo., 6s.

Richman.—*APPENZELL: PURE DEMOCRACY AND PASTORAL LIFE IN INNER-RHODEN.* A Swiss Study. By IRVING B. RICHMAN, Consul-General of the United States to Switzerland. With Maps. Crown 8vo., 5s.

Seebohm (FREDERIC).

THE ENGLISH VILLAGE COMMUNITY Examined in its Relations to the Manorial and Tribal Systems, etc. With 13 Maps and Plates. 8vo., 16s.

THE TRIBAL SYSTEM IN WALES: Being Part of an Inquiry into the Structure and Methods of Tribal Society. With 3 Maps. 8vo., 12s.

Sharpe.—*LONDON AND THE KINGDOM:* a History derived mainly from the Archives at Guildhall in the custody of the Corporation of the City of London. By REGINALD R. SHARPE, D.C.L., Records Clerk in the Office of the Town Clerk of the City of London. 3 vols. 8vo. 10s. 6d. each.

Smith.—*CARTHAGE AND THE CARTHAGINIANS.* By R. BOSWORTH SMITH, M.A., With Maps, Plans, etc. Cr. 8vo., 3s. 6d.

Stephens.—*A HISTORY OF THE FRENCH REVOLUTION.* By H. MORSE STEPHENS. 8vo. Vols. I. and II. 18s. each.

Stubbs.—*HISTORY OF THE UNIVERSITY OF DUBLIN,* from its Foundation to the End of the Eighteenth Century. By J. W. STUBBS. 8vo., 12s. 6d.

Sutherland.—*THE HISTORY OF AUSTRALIA AND NEW ZEALAND,* from 1606-1890. By ALEXANDER SUTHERLAND, M.A., and GEORGE SUTHERLAND, M.A. Crown 8vo., 2s. 6d.

Taylor.—*A STUDENT'S MANUAL OF THE HISTORY OF INDIA.* By Colonel MEADOWS TAYLOR, C.S.I., etc. Cr. 8vo., 7s. 6d.

Todd.—*PARLIAMENTARY GOVERNMENT IN THE BRITISH COLONIES.* By ALPHEUS TODD, LL.D. 8vo., 30s. net.

Trevelyan.—*THE AMERICAN REVOLUTION.* Part I. 1766-1776. By the Rt. Hon. Sir G. O. TREVELYAN, Bart. 8vo., 16s.

Trevelyan.—*ENGLAND IN THE AGE OF WYCLIFFE.* By GEORGE MACAULAY TREVELYAN. 8vo., 15s.

Wakeman and Hassall.—*ESSAYS INTRODUCTORY TO THE STUDY OF ENGLISH CONSTITUTIONAL HISTORY.* By Resident Members of the University of Oxford. Edited by HENRY OFFLEY WAKEMAN, M.A., and ARTHUR HASSALL, M.A. Crown 8vo., 6s.

Walpole.—*HISTORY OF ENGLAND FROM THE CONCLUSION OF THE GREAT WAR IN 1815 TO 1858.* By Sir SPENCER WALPOLE, K.C.B. 6 vols. Crown 8vo., 6s. each.

Wood-Martin.—*PAGAN IRELAND: AN ARCHÆOLOGICAL SKETCH.* A Handbook of Irish Pre-Christian Antiquities. By W. G. WOOD-MARTIN, M.R.I.A. With 512 Illustrations. Crown 8vo., 15s.

Wylie.—*HISTORY OF ENGLAND UNDER HENRY IV.* By JAMES HAMILTON WYLIE, M.A., one of H.M. Inspectors of Schools. 4 vols. Crown 8vo. Vol. I., 1399-1404, 10s. 6d. Vol. II., 1405-1406, 15s. Vol. III., 1407-1411, 15s. Vol. IV., 1411-1413, 21s.

Biography, Personal Memoirs, &c.

Armstrong.—*The Life and Letters of Edmund J. Armstrong.* Edited by G. F. Savage Armstrong. Fcp. 8vo., 7s. 6d.

Bacon.—*The Letters and Life of Francis Bacon, including all his Occasional Works.* Edited by James Spedding. 7 vols. 8vo., £4 4s.

Bagehot.—*Biographical Studies.* By Walter Bagehot. Crown 8vo., 3s. 6d.

Boevey.—'*The Perverse Widow*': being passages from the Life of Catharina, wife of William Boevey, Esq., of Flaxley Abbey, in the County of Gloucester. Compiled by Arthur W. Crawley-Boevey, M.A. With Portraits. 4to., 42s. net.

Carlyle.—*Thomas Carlyle:* A History of his Life. By James Anthony Froude.
1795-1835. 2 vols. Crown 8vo., 7s.
1834-1881. 2 vols. Crown 8vo., 7s.

Crozier.—*My Inner Life:* being a Chapter in Personal Evolution and Autobiography. By John Beattie Crozier, Author of 'Civilisation and Progress,' etc. 8vo., 14s.

Danton.—*Life of Danton.* By A. H. Beesly. With Portraits of Danton, his Mother, and an Illustration of the Home of his family at Arcis. 8vo., 12s. 6d.

Digby.—*The Life of Sir Kenelm Digby, by one of his Descendants*, the Author of 'Falklands,' etc. With 7 Illustrations. 8vo., 16s.

Duncan.—*Admiral Duncan.* By The Earl of Camperdown. With 3 Portraits. 8vo., 16s.

Erasmus.—*Life and Letters of Erasmus.* By James Anthony Froude. Crown 8vo., 6s.

FALKLANDS. By the Author of 'The Life of Sir Kenelm Digby,' etc. With 6 Portraits and 2 other Illustrations. 8vo., 10s. 6d.

Faraday.—*Faraday as a Discoverer.* By John Tyndall. Crown 8vo, 3s. 6d.

FOREIGN COURTS AND FOREIGN HOMES. By A. M. F. Crown 8vo., 6s.

Fox.—*The Early History of Charles James Fox.* By the Right Hon. Sir G. O. Trevelyan, Bart.
Library Edition. 8vo., 18s.
Cabinet Edition. Crown 8vo., 6s.

Halifax.—*The Life and Letters of Sir George Savile, Baronet, First Marquis of Halifax.* By H. C. Foxcroft. 2 vols. 8vo., 36s.

Hamilton.—*Life of Sir William Hamilton.* By R. P. Graves. 8vo. 3 vols. 15s. each. Addendum. 8vo., 6d. sewed.

Havelock.—*Memoirs of Sir Henry Havelock, K.C.B.* By John Clark Marshman. Crown 8vo., 3s. 6d.

Haweis.—*My Musical Life.* By the Rev. H. R. Haweis. With Portrait of Richard Wagner and 3 Illustrations. Crown 8vo., 7s. 6d.

Hiley.—*Memories of Half a Century.* By the Rev. R. W. Hiley, D.D., Vicar of Wighill, Tadcaster. With Portrait. 8vo.

Holroyd.—*The Girlhood of Maria Josepha Holroyd* (*Lady Stanley of Alderley*). Recorded in Letters of a Hundred Years Ago, from 1776-1796. Edited by J. H. Adeane. With 6 Portraits. 8vo., 18s.

Jackson.—*Stonewall Jackson and the American Civil War.* By Lieut.-Col. G. F. R. Henderson. With 2 Portraits and 33 Maps and Plans. 2 vols. 8vo., 42s.

Lejeune.—*Memoirs of Baron Lejeune*, Aide-de-Camp to Marshals Berthier, Davout, and Oudinot. Translated and Edited from the Original French by Mrs. Arthur Bell (N. D'Anvers). 2 vols. 8vo., 24s.

Luther.—*Life of Luther.* By Julius Köstlin. With 62 Illustrations and 4 Facsimilies of MSS. Crown 8vo., 3s. 6d.

Macaulay.—*The Life and Letters of Lord Macaulay.* By the Right Hon. Sir G. O. Trevelyan, Bart.
Popular Edition. 1 vol. Cr. 8vo., 2s. 6d.
Student's Edition 1 vol. Cr. 8vo., 6s.
Cabinet Edition. 2 vols. Post 8vo., 12s.
'Edinburgh' Edition. 2 vols. 8vo., 6s. each.
Library Edition. 2 vols. 8vo., 36s.

Marbot.—*The Memoirs of the Baron de Marbot.* Translated from the French. 2 vols. Crown 8vo., 7s.

Max Müller.—*Auld Lang Syne.* By the Right Hon. F. Max Müller. With Portrait. 8vo, 10s. 6d.

Contents.—Musical Recollections—Literary Recollections—Recollections of Royalties—Beggars.

Biography, Personal Memoirs, &c.—*continued.*

Morris. — *The Life of William Morris.* By J. W. Mackail. With 6 Portraits and 16 Illustrations by E. H. New, etc. 2 vols. 8vo., 32*s.*

Palgrave.—*Francis Turner Palgrave:* His Journals, and Memories of his Life. By Gwenllian F. Palgrave. With Portrait and Illustration. 8vo., 10*s.* 6*d.*

Place.—*The Life of Francis Place,* 1771-1854. By Graham Wallas, M.A. With 2 Portraits. 8vo., 12*s.*

Powys. — *Passages from the Diaries of Mrs. Philip Lybbe Powys,* of Hardwick House, Oxon., 1756-1808. Edited by Emily J. Climenson, of Shiplake Vicarage, Oxon. With 2 Pedigrees (Lybbe and Powys) and Photogravure Portrait.

Râmakrishna: His Life and Sayings. By the Right Hon. F. Max Müller. Crown 8vo., 5*s.*

Reeve.—*Memoirs of the Life and Correspondence of Henry Reeve, C.B.,* late Editor of the 'Edinburgh Review,' and Registrar of the Privy Council. By John Knox Laughton, M.A. With 2 Portraits. 2 vols. 8vo., 28*s.*

Romanes.—*The Life and Letters of George John Romanes, M.A., LL.D., F.R.S.* Written and Edited by his Wife. With Portrait and 2 Illustrations. Cr. 8vo., 6*s.*

Seebohm.—*The Oxford Reformers—John Colet, Erasmus and Thomas More:* a History of their Fellow-Work. By Frederic Seebohm. 8vo., 14*s.*

Shakespeare. — *Outlines of the Life of Shakespeare.* By J. O. Halliwell-Phillipps. With Illustrations and Fac-similes. 2 vols. Royal 8vo., 21*s.*

Shakespeare's *True Life.* By James Walter With 500 Illustrations by Gerald E. Moira. Imp. 8vo., 21*s.*

Verney.—*Memoirs of the Verney Family.* Compiled from the Letters and Illustrated by the Portraits at Clayden House.

Vols. I. & II., *During the Civil War.* By Frances Parthenope Verney. With 38 Portraits, Woodcuts and Fac-simile. Royal 8vo., 42*s.*

Vol. III., *During the Commonwealth.* 1650-1660. By Margaret M. Verney. With 10 Portraits, etc. Royal 8vo., 21*s.*

Vol. IV., *From the Restoration to the Revolution.* 1660 to 1696. By Margaret M. Verney. With Ports. Royal 8vo., 21*s.*

Wakley.—*The Life and Times of Thomas Wakley,* Founder and First Editor of the 'Lancet'. By S. Squire Sprigge. With 2 Portraits. 8vo., 6*s.*

Wellington.—*Life of the Duke of Wellington.* By the Rev. G. R. Gleig, M.A. Crown 8vo., 3*s.* 6*d.*

Wollstonecraft.—*A Study of Mary Wollstonecraft, and the Rights of Woman.* By Emma Rauschenbusch-Clough, Ph.D. 8vo., 7*s.* 6*d.*

Travel and Adventure, the Colonies, &c.

Arnold.—*Seas and Lands.* By Sir Edwin Arnold. With 71 Illustrations. Crown 8vo., 3*s.* 6*d.*

Ball (John).

Hints and Notes, Practical and Scientific, for Travellers in the Alps: being a Revision of the General Introduction to the 'Alpine Guide'. A New Edition, prepared on behalf of the Alpine Club, by W. A. B. Coolidge. Fcp. 8vo., 3*s.* net.

The Alpine Guide. A New Edition, Reconstructed and Revised on behalf of the Alpine Club, by W. A. B. Coolidge.

Vol. I., *The Western Alps:* the Alpine Region, South of the Rhone Valley, from the Col de Tenda to the Simplon Pass. With 9 New and Revised Maps. Crown 8vo., 12*s.* net.

Baker (Sir S. W.).

Eight Years in Ceylon. With 6 Illustrations. Crown 8vo., 3*s.* 6*d.*

The Rifle and the Hound in Ceylon. With 6 Illustrations. Crown 8vo., 3*s.* 6*d.*

Bent.—*The Ruined Cities of Mashonaland:* being a Record of Excavation and Exploration in 1891. By J. Theodore Bent. With 117 Illustrations. Crown 8vo., 3*s.* 6*d.*

Bicknell.—*Travel and Adventure in Northern Queensland.* By Arthur C. Bicknell. With 24 Plates and 22 Illustrations in the Text. 8vo., 15*s.*

Brassey.—*Voyages and Travels of Lord Brassey, K.C.B., D.C.L.,* 1862-1894. Arranged and Edited by Captain S. Eardley-Wilmot. 2 vols. Cr. 8vo., 10*s.*

Travel and Adventure, the Colonies, &c.—*continued.*

Brassey (THE LATE LADY).

A VOYAGE IN THE 'SUNBEAM'; OUR HOME ON THE OCEAN FOR ELEVEN MONTHS.
Cabinet Edition. With Map and 66 Illustrations. Crown 8vo., 7*s.* 6*d.*
'Silver Library' Edition. With 66 Illustrations. Crown 8vo., 3*s.* 6*d.*
Popular Edition. With 60 Illustrations. 4to., 6*d.* sewed, 1*s.* cloth.
School Edition. With 37 Illustrations. Fcp., 2*s.* cloth, or 3*s.* white parchment.

SUNSHINE AND STORM IN THE EAST.
Cabinet Edition. With 2 Maps and 114 Illustrations. Crown 8vo., 7*s.* 6*d.*
Popular Edition. With 103 Illustrations. 4to., 6*d.* sewed, 1*s.* cloth.

IN THE TRADES, THE TROPICS, AND THE 'ROARING FORTIES'.
Cabinet Edition. With Map and 220 Illustrations. Crown 8vo., 7*s.* 6*d.*
Popular Edition. With 183 Illustrations. 4to., 6*d.* sewed, 1*s.* cloth.

THREE VOYAGES IN THE 'SUNBEAM'. Popular Ed. With 346 Illust. 4to., 2*s.* 6*d.*

Browning.—*A GIRL'S WANDERINGS IN HUNGARY.* By H. ELLEN BROWNING. With Map and 20 Illustrations. Crown 8vo., 3*s.* 6*d.*

Churchill.—*THE STORY OF THE MALAKAND FIELD FORCE,* 1897. By WINSTON SPENCER CHURCHILL, Lieut., 4th Queen's Own Hussars. With 6 Maps and Plans. Crown 8vo., 3*s.* 6*d.*

Froude (JAMES A.).

OCEANA: or England and her Colonies. With 9 Illustrations. Cr. 8vo., 3*s.* 6*d.*

THE ENGLISH IN THE WEST INDIES: or, the Bow of Ulysses. With 9 Illustrations. Crown 8vo., 2*s.* boards, 2*s.* 6*d.* cloth.

Howitt.—*VISITS TO REMARKABLE PLACES.* Old Halls, Battle-Fields, Scenes, illustrative of Striking Passages in English History and Poetry. By WILLIAM HOWITT. With 80 Illustrations. Crown 8vo., 3*s.* 6*d.*

Knight (E. F.).

THE CRUISE OF THE 'ALERTE': the Narrative of a Search for Treasure on the Desert Island of Trinidad. With 2 Maps and 23 Illustrations. Crown 8vo., 3*s.* 6*d.*

WHERE THREE EMPIRES MEET: a Narrative of Recent Travel in Kashmir, Western Tibet, Baltistan, Ladak, Gilgit, and the adjoining Countries. With a Map and 54 Illustrations. Cr. 8vo., 3*s.* 6*d.*

Knight (E. F.)—*continued.*

THE 'FALCON' ON THE BALTIC: a Voyage from London to Copenhagen in a Three-Tonner. With 10 Full-page Illustrations. Crown 8vo., 3*s.* 6*d.*

Lees and Clutterbuck.—B.C. 1887: *A RAMBLE IN BRITISH COLUMBIA.* By J. A. LEES and W. J. CLUTTERBUCK. With Map and 75 Illustrations. Crown 8vo., 3*s.* 6*d.*

Macdonald.—*THE GOLD COAST: PAST AND PRESENT.* By GEORGE MACDONALD, Director of Education and H.M. Inspector of Schools for the Gold Coast Colony and the Protectorate. With 32 Illustrations. Crown 8vo., 7*s.* 6*d.*

Max Müller.—*LETTERS FROM CONSTANTINOPLE.* By Mrs. MAX MÜLLER. With 12 Views of Constantinople and the neighbourhood. Crown 8vo., 6*s.*

Nansen.—*THE FIRST CROSSING OF GREENLAND.* By FRIDTJOF NANSEN. With 143 Illustrations and a Map. Crown 8vo., 3*s.* 6*d.*

Oliver.—*CRAGS AND CRATERS:* Rambles in the Island of Réunion. By WILLIAM DUDLEY OLIVER, M.A. With 27 Illustrations and a Map. Cr. 8vo., 6*s.*

Smith.—*CLIMBING IN THE BRITISH ISLES.* By W. P. HASKETT SMITH. With Illustrations by ELLIS CARR, and Numerous Plans.
Part I. *ENGLAND.* 16mo., 3*s.* 6*d.*
Part II. *WALES AND IRELAND.* 16mo., 3*s.* 6*d.*

Stephen.—*THE PLAY-GROUND OF EUROPE* (The Alps). By LESLIE STEPHEN. With 4 Illustrations. Crown 8vo., 3*s.* 6*d.*

THREE IN NORWAY. By Two of Them. With a Map and 59 Illustrations. Crown 8vo., 2*s.* boards, 2*s.* 6*d.* cloth.

Tyndall.—*THE GLACIERS OF THE ALPS:* being a Narrative of Excursions and Ascents. An Account of the Origin and Phenomena of Glaciers, and an Exposition of the Physical Principles to which they are related. By JOHN TYNDALL, F.R.S. With 61 Illustrations. Crown 8vo., 6*s.* 6*d.* net.

Vivian.—*SERVIA:* the Poor Man's Paradise. By HERBERT VIVIAN, M.A., Officer of the Royal Order of Takovo. With Map and Portrait of King Alexander. 8vo., 15*s.*

Veterinary Medicine, &c.

Steel (JOHN HENRY, F.R.C.V.S., F.Z.S., A.V.D.), late Professor of Veterinary Science and Principal of Bombay Veterinary College.

A TREATISE ON THE DISEASES OF THE DOG; being a Manual of Canine Pathology. Especially adapted for the use of Veterinary Practitioners and Students. With 88 Illustrations. 8vo., 10s. 6d.

A TREATISE ON THE DISEASES OF THE OX; being a Manual of Bovine Pathology. Especially adapted for the use of Veterinary Practitioners and Students. With 2 Plates and 117 Woodcuts. 8vo., 15s.

A TREATISE ON THE DISEASES OF THE SHEEP; being a Manual of Ovine Pathology for the use of Veterinary Practitioners and Students. With Coloured Plate and 99 Woodcuts. 8vo., 12s.

OUTLINES OF EQUINE ANATOMY; a Manual for the use of Veterinary Students in the Dissecting Room. Cr. 8vo., 7s. 6d.

Fitzwygram. — *HORSES AND STABLES.* By Major-General Sir F. FITZWYGRAM, Bart. With 56 pages of Illustrations. 8vo., 2s. 6d. net.

Schreiner. — *THE ANGORA GOAT* (published under the auspices of the South African Angora Goat Breeders' Association), and a Paper on the Ostrich (reprinted from the *Zoologist* for March, 1897). With 26 Illustrations. By S. C. CRONWRIGHT SCHREINER. 8vo., 10s. 6d.

'Stonehenge.' — *THE DOG IN HEALTH AND DISEASE.* By 'STONEHENGE'. With 78 Wood Engravings. 8vo., 7s. 6d.

Youatt (WILLIAM).

THE HORSE. Revised and Enlarged by W. WATSON, M.R.C.V.S. With 52 Wood Engravings. 8vo., 7s. 6d.

THE DOG. Revised and Enlarged. With 33 Wood Engravings. 8vo., 6s.

Sport and Pastime.

THE BADMINTON LIBRARY.

Edited by HIS GRACE THE DUKE OF BEAUFORT, K.G., and A. E. T. WATSON.
Complete in 29 Volumes. Crown 8vo., Price 10s. 6d. each Volume, Cloth.
*** *The Volumes are also issued half-bound in Leather, with gilt top. The price can be had from all Booksellers.*

ARCHERY. By C. J. LONGMAN and Col. H. WALROND. With Contributions by Miss LEGH, Viscount DILLON, etc. With 2 Maps, 23 Plates and 172 Illustrations in the Text. Crown 8vo., 10s. 6d.

ATHLETICS. By MONTAGUE SHEARMAN. With Chapters on Athletics at School by W. BEACHER THOMAS; Athletic Sports in America by C. H. SHERRILL; a Contribution on Paper-chasing by W. RYE, and an Introduction by Sir RICHARD WEBSTER, Q.C., M.P. With 12 Plates and 37 Illustrations in the Text. Cr. 8vo., 10s. 6d.

BIG GAME SHOOTING. By CLIVE PHILLIPPS-WOLLEY.

Vol. I. AFRICA AND AMERICA. With Contributions by Sir SAMUEL W. BAKER, W. C. OSWELL, F. C. SELOUS, etc. With 20 Plates and 57 Illustrations in the Text. Crown 8vo., 10s. 6d.

Vol. II. EUROPE, ASIA, AND THE ARCTIC REGIONS. With Contributions by Lieut.-Colonel R. HEBER PERCY, Major ALGERNON C. HEBER PERCY, etc. With 17 Plates and 56 Illustrations in the Text. Cr. 8vo., 10s. 6d.

BILLIARDS. By Major W. BROADFOOT, R.E. With Contributions by A. H. BOYD, SYDENHAM DIXON, W. J. FORD, etc. With 11 Plates, 19 Illustrations in the Text, and numerous Diagrams. Cr. 8vo., 10s. 6d.

COURSING AND FALCONRY. By HARDING COX, CHARLES RICHARDSON, and the Hon. GERALD LASCELLES. With 20 Plates and 55 Illustrations in the Text. Crown 8vo., 10s. 6d.

CRICKET. By A. G. STEEL and the Hon. R. H. LYTTELTON. With Contributions by ANDREW LANG, W. G. GRACE, F. GALE, etc. With 13 Plates and 52 Illustrations in the Text. Crown 8vo., 10s. 6d.

CYCLING. By the EARL OF ALBEMARLE and G. LACY HILLIER. With 19 Plates and 44 Illustrations in the Text. Crown 8vo., 10s. 6d.

DANCING. By Mrs. LILLY GROVE, F.R.G.S. With Contributions by Miss MIDDLETON, The Hon. Mrs. ARMYTAGE, etc. With Musical Examples, and 38 Full-page Plates and 93 Illustrations in the Text. Crown 8vo., 10s. 6d.

DRIVING. By His Grace the DUKE of BEAUFORT, K.G. With Contributions by A. E. T. WATSON the EARL OF ONSLOW, etc. With 12 Plates and 54 Illustrations in the Text. Crown 8vo., 10s. 6d.

Sport and Pastime—*continued.*

THE BADMINTON LIBRARY—*continued.*

FENCING, BOXING, AND WRESTLING. By WALTER H. POLLOCK, F. C. GROVE, C. PREVOST, E. B. MITCHELL, and WALTER ARMSTRONG. With 18 Plates and 24 Illust. in the Text. Cr. 8vo., 10s. 6d.

FISHING. By H. CHOLMONDELEY-PENNELL.

Vol. I. SALMON AND TROUT. With Contributions by H. R. FRANCIS, Major JOHN P. TRAHERNE, etc. With 9 Plates and numerous Illustrations of Tackle, etc. Crown 8vo., 10s. 6d.

Vol. II. PIKE AND OTHER COARSE FISH. With Contributions by the MARQUIS OF EXETER, WILLIAM SENIOR, G. CHRISTOPHER DAVIS, etc. With 7 Plates and numerous Illustrations of Tackle, etc. Crown 8vo., 10s. 6d.

FOOTBALL. By MONTAGUE SHEARMAN, W. J. OAKLEY, G. O. SMITH, FRANK MITCHELL, etc. With 19 Plates and 35 Illustrations in the Text. Cr. 8vo., 10s. 6d.

GOLF. By HORACE G. HUTCHINSON. With Contributions by the Rt. Hon. A. J. BALFOUR, M.P., Sir WALTER SIMPSON, Bart., ANDREW LANG, etc. With 32 Plates and 57 Illustrations in the Text. Cr. 8vo., 10s. 6d.

HUNTING. By His Grace the DUKE OF BEAUFORT, K.G., and MOWBRAY MORRIS. With Contributions by the EARL OF SUFFOLK AND BERKSHIRE, Rev. E. W. L. DAVIES, G. H. LONGMAN, etc. With 5 Plates and 54 Illustrations in the Text. Cr. 8vo., 10s. 6d.

MOUNTAINEERING. By C. T. DENT. With Contributions by Sir W. M. CONWAY, D. W. FRESHFIELD, C. E. MATTHEWS, etc. With 13 Plates and 95 Illustrations in the Text. Cr. 8vo., 10s. 6d.

POETRY OF SPORT (THE).—Selected by HEDLEY PEEK. With a Chapter on Classical Allusions to Sport by ANDREW LANG, and a Special Preface to the BADMINTON LIBRARY by A. E. T. WATSON. With 32 Plates and 74 Illustrations in the Text. Crown 8vo., 10s. 6d.

RACING AND STEEPLE-CHASING. By the EARL OF SUFFOLK AND BERKSHIRE, W. G. CRAVEN, the Hon. F. LAWLEY, ARTHUR COVENTRY, and A. E. T. WATSON. With Frontispiece and 56 Illustrations in the Text. Crown 8vo., 10s. 6d.

RIDING AND POLO. By Captain ROBERT WEIR, J. MORAY BROWN, T. F. DALE, THE DUKE OF BEAUFORT, THE EARL OF SUFFOLK AND BERKSHIRE, etc. With 18 Plates and 41 Illustrations in the Text. Crown 8vo., 10s. 6d.

ROWING. By R. P. P. ROWE and C. M. PITMAN. With Chapters on Steering by C. P. SEROCOLD and F. C. BEGG; Metropolitan Rowing by S. LE BLANC SMITH; and on PUNTING by P. W. SQUIRE. With 75 Illustrations. Crown 8vo., 10s. 6d.

SEA FISHING. By JOHN BICKERDYKE, Sir H. W. GORE-BOOTH, ALFRED C. HARMSWORTH, and W. SENIOR. With 22 Full-page Plates and 175 Illustrations in the Text. Crown 8vo., 10s. 6d.

SHOOTING.

Vol. I. FIELD AND COVERT. By LORD WALSINGHAM and Sir RALPH PAYNE-GALLWEY, Bart. With Contributions by the Hon. GERALD LASCELLES and A. J. STUART-WORTLEY. With 11 Plates and 94 Illusts. in the Text. Cr. 8vo., 10s. 6d.

Vol. II. MOOR AND MARSH. By LORD WALSINGHAM and Sir RALPH PAYNE-GALLWEY, Bart. With Contributions by LORD LOVAT and Lord CHARLES LENNOX KERR. With 8 Plates and 57 Illustrations in the Text. Crown 8vo., 10s. 6d.

SKATING, CURLING, TOBOGGANING. By J. M. HEATHCOTE, C. G. TEBBUTT, T. MAXWELL WITHAM, Rev. JOHN KERR, ORMOND HAKE, HENRY A. BUCK, etc. With 12 Plates and 272 Illustrations in the Text. Crown 8vo., 10s. 6d.

SWIMMING. By ARCHIBALD SINCLAIR and WILLIAM HENRY, Hon. Secs. of the Life-Saving Society. With 13 Plates and 106 Illustrations in the Text. Cr. 8vo., 10s. 6d.

TENNIS, LAWN TENNIS, RACKETS AND FIVES. By J. M. and C. G. HEATHCOTE, E. O. PLEYDELL-BOUVERIE, and A. C. AINGER. With Contributions by the Hon. A. LYTTELTON, W. C. MARSHALL, Miss L. DOD, etc. With 12 Plates and 67 Illustrations in the Text. Cr. 8vo., 10s. 6d.

YACHTING.

Vol. I. CRUISING, CONSTRUCTION OF YACHTS, YACHT RACING RULES, FITTING-OUT, etc. By Sir EDWARD SULLIVAN, Bart., THE EARL OF PEMBROKE, LORD BRASSEY, K.C.B., C. E. SETH-SMITH, C.B., G. L. WATSON, R. T. PRITCHETT, E. F. KNIGHT, etc. With 21 Plates and 93 Illustrations in the Text. Crown 8vo., 10s. 6d.

Vol. II. YACHT CLUBS, YACHTING IN AMERICA AND THE COLONIES, YACHT RACING, etc. By R. T. PRITCHETT, THE MARQUIS OF DUFFERIN AND AVA, K.P., THE EARL OF ONSLOW, JAMES MCFERRAN, etc. With 35 Plates and 160 Illustrations in the Text. Crown 8vo., 10s. 6d.

Sport and Pastime—*continued.*

FUR, FEATHER, AND FIN SERIES.

Edited by A. E. T. WATSON.

Crown 8vo., price 5*s.* each Volume, cloth.

*** *The Volumes are also issued half-bound in Leather, with gilt top. The price can be had from all Booksellers.*

THE PARTRIDGE. Natural History, by the Rev. H. A. MACPHERSON; Shooting, by A. J. STUART-WORTLEY; Cookery, by GEORGE SAINTSBURY. With 11 Illustrations and various Diagrams in the Text. Crown 8vo., 5*s.*

THE GROUSE. Natural History, by the Rev. H. A. MACPHERSON; Shooting, by A. J. STUART-WORTLEY; Cookery, by GEORGE SAINTSBURY. With 13 Illustrations and various Diagrams in the Text. Crown 8vo., 5*s.*

THE PHEASANT. Natural History, by the Rev. H. A. MACPHERSON; Shooting, by A. J. STUART-WORTLEY; Cookery, by ALEXANDER INNES SHAND. With 10 Illustrations and various Diagrams. Crown 8vo., 5*s.*

THE HARE. Natural History, by the Rev. H. A. MACPHERSON; Shooting, by the Hon. GERALD LASCELLES; Coursing, by CHARLES RICHARDSON; Hunting, by J. S. GIBBONS and G. H. LONGMAN; Cookery, by Col. KENNEY HERBERT. With 9 Illustrations. Crown 8vo, 5*s.*

RED DEER.—Natural History, by the Rev. H. A. MACPHERSON; Deer Stalking, by CAMERON OF LOCHIEL; Stag Hunting, by Viscount EBRINGTON; Cookery, by ALEXANDER INNES SHAND. With 10 Illustrations. Crown 8vo., 5*s.*

THE SALMON. By the Hon. A. E. GATHORNE-HARDY. With Chapters on the Law of Salmon Fishing by CLAUD DOUGLAS PENNANT; Cookery, by ALEXANDER INNES SHAND. With 8 Illustrations. Cr. 8vo., 5*s.*

THE TROUT. By the MARQUESS OF GRANBY. With Chapters on the Breeding of Trout by Col. H. CUSTANCE; and Cookery, by ALEXANDER INNES SHAND. With 12 Illustrations. Crown 8vo., 5*s.*

THE RABBIT. By JAMES EDMUND HARTING. With a Chapter on Cookery by ALEXANDER INNES SHAND. With 10 Illustrations. Crown 8vo., 5*s.*

WILDFOWL. By the Hon. JOHN SCOTT MONTAGU, etc. With Illustrations, etc. [*In preparation.*

André.—*COLONEL BOGEY'S SKETCH-BOOK.* Comprising an Eccentric Collection of Scribbles and Scratches found in disused Lockers and swept up in the Pavilion, together with sundry After-Dinner Sayings of the Colonel. By R. ANDRÉ, West Herts Golf Club. Oblong 4to., 2*s.* 6*d.*

BADMINTON MAGAZINE (THE) OF SPORTS AND PASTIMES. Edited by ALFRED E. T. WATSON ("Rapier"). With numerous Illustrations. Price 1*s.* monthly.

Vols. I.-VII. 6*s.* each.

DEAD SHOT (THE): or, Sportsman's Complete Guide. Being a Treatise on the Use of the Gun, with Rudimentary and Finishing Lessons in the Art of Shooting Game of all kinds. Also Game-driving, Wildfowl and Pigeon-shooting, Dog-breaking, etc. By MARKSMAN. With numerous Illustrations. Crown 8vo., 10*s.* 6*d.*

Ellis.—*CHESS SPARKS;* or, Short and Bright Games of Chess. Collected and Arranged by J. H. ELLIS, M.A. 8vo., 4*s.* 6*d.*

Folkard.—*THE WILD-FOWLER:* A Treatise on Fowling, Ancient and Modern, descriptive also of Decoys and Flight-ponds, Wild-fowl Shooting, Gunning-punts, Shooting-yachts, etc. Also Fowling in the Fens and in Foreign Countries, Rock-fowling, etc., etc., by H. C. FOLKARD. With 13 Engravings on Steel, and several Woodcuts. 8vo., 12*s.* 6*d.*

Ford.—*THE THEORY AND PRACTICE OF ARCHERY.* By HORACE FORD. New Edition, thoroughly Revised and Re-written by W. BUTT, M.A. With a Preface by C. J. LONGMAN, M.A. 8vo., 14*s.*

Francis.—*A BOOK ON ANGLING:* or, Treatise on the Art of Fishing in every Branch; including full Illustrated List of Salmon Flies. By FRANCIS FRANCIS. With Portrait and Coloured Plates. Crown 8vo., 15*s.*

Sport and Pastime—*continued.*

Gibson.—*Tobogganing on Crooked Runs.* By the Hon. Harry Gibson. With Contributions by F. de B. Strickland and 'Lady-Toboganner'. With 40 Illustrations. Crown 8vo., 6s.

Graham.—*Country Pastimes for Boys.* By P. Anderson Graham. With 252 Illustrations from Drawings and Photographs. Crown 8vo., 3s. 6d.

Hutchinson.—*The Book of Golf and Golfers.* By Horace G. Hutchinson. With Contributions by Miss Amy Pascoe, H. H. Hilton, J. H. Taylor, H. J. Whigham, and Messrs. Sutton & Sons. With 71 Portraits, etc. Medium 8vo., 18s. net.

Lang.—*Angling Sketches.* By Andrew Lang. With 20 Illustrations. Crown 8vo., 3s. 6d.

Lillie.—*Croquet:* its History, Rules and Secrets. By Arthur Lillie, Champion, Grand National Croquet Club, 1872; Winner of the 'All-Comers' Championship,' Maidstone, 1896. With 4 Full-page Illustrations by Lucien Davis, 15 Illustrations in the Text, and 27 Diagrams. Crown 8vo., 6s.

Longman.—*Chess Openings.* By Frederick W. Longman. Fcp. 8vo., 2s. 6d.

Madden.—*The Diary of Master William Silence:* a Study of Shakespeare and of Elizabethan Sport. By the Right Hon. D. H. Madden, Vice-Chancellor of the University of Dublin. 8vo., 16s.

Maskelyne.—*Sharps and Flats:* a Complete Revelation of the Secrets of Cheating at Games of Chance and Skill. By John Nevil Maskelyne, of the Egyptian Hall. With 62 Illustrations. Crown 8vo., 6s.

Moffat.—*Cricket v Cricket:* Rhymes and Parodies. By Douglas Moffat, with Frontispiece by Sir Frank Lockwood, Q.C., M.P., and 53 Illustrations by the Author. Crown 8vo, 2s. 6d.

Park.—*The Game of Golf.* By William Park, Jun., Champion Golfer, 1887-89. With 17 Plates and 26 Illustrations in the Text. Crown 8vo., 7s. 6d.

Payne-Gallwey (Sir Ralph, Bart.).

Letters to Young Shooters (First Series). On the Choice and use of a Gun. With 41 Illustrations. Crown 8vo., 7s. 6d.

Payne-Gallwey (Sir Ralph, Bart.) *—continued.*

Letters to Young Shooters (Second Series). On the Production, Preservation, and Killing of Game. With Directions in Shooting Wood-Pigeons and Breaking-in Retrievers. With Portrait and 103 Illustrations. Crown 8vo., 12s. 6d.

Letters to Young Shooters. (Third Series.) Comprising a Short Natural History of the Wildfowl that are Rare or Common to the British Islands, with complete directions in Shooting Wildfowl on the Coast and Inland. With 200 Illustrations. Crown 8vo., 18s.

Pole—*The Theory of the Modern Scientific Game of Whist.* By William Pole, F.R.S. Fcp. 8vo., 2s. 6d.

Proctor.—*How to Play Whist: with the Laws and Etiquette of Whist.* By Richard A. Proctor. Crown 8vo., 3s. 6d.

Ribblesdale.—*The Queen's Hounds and Stag-Hunting Recollections.* By Lord Ribblesdale, Master of the Buckhounds, 1892-95. With Introductory Chapter on the Hereditary Mastership by E. Burrows. With 24 Plates and 35 Illustrations in the Text. 8vo., 25s.

Ronalds.—*The Fly-Fisher's Entomology.* By Alfred Ronalds. With 20 coloured Plates. 8vo., 14s.

Watson.—*Racing and 'Chasing:* a Collection of Sporting Stories. By Alfred E. T. Watson, Editor of the 'Badminton Magazine'. With 16 Plates and 36 Illustrations in the Text. Crown 8vo, 7s. 6d.

Wilcocks.—*The Sea Fisherman:* Comprising the Chief Methods of Hook and Line Fishing in the British and other Seas, and Remarks on Nets, Boats, and Boating. By J. C. Wilcocks. Illustrated. Cr. 8vo., 6s.

Mental, Moral, and Political Philosophy.

LOGIC, RHETORIC, PSYCHOLOGY, &c.

Abbott.—*THE ELEMENTS OF LOGIC.* By T. K. ABBOTT, B.D. 12mo., 3s.

Aristotle.

THE ETHICS: Greek Text, Illustrated with Essay and Notes. By Sir ALEXANDER GRANT, Bart. 2 vols. 8vo., 32s.

AN INTRODUCTION TO ARISTOTLE'S ETHICS. Books I.-IV. (Book X. c. vi.-ix. in an Appendix). With a continuous Analysis and Notes. By the Rev. E. MOORE, D.D. Crown 8vo. 10s. 6d.

Bacon (FRANCIS).

COMPLETE WORKS. Edited by R. L. ELLIS, JAMES SPEDDING and D. D. HEATH. 7 vols. 8vo., £3 13s. 6d.

LETTERS AND LIFE, including all his occasional Works. Edited by JAMES SPEDDING. 7 vols. 8vo., £4 4s.

THE ESSAYS: with Annotations. By RICHARD WHATELY, D.D. 8vo., 10s. 6d.

THE ESSAYS: with Notes. By F. STORR and C. H. GIBSON. Cr. 8vo, 3s. 6d.

THE ESSAYS: with Introduction, Notes, and Index. By E. A. ABBOTT, D.D. 2 Vols. Fcp. 8vo., 6s. The Text and Index only, without Introduction and Notes, in One Volume. Fcp. 8vo., 2s. 6d.

Bain (ALEXANDER).

MENTAL SCIENCE. Cr. 8vo., 6s. 6d.

MORAL SCIENCE. Cr. 8vo., 4s. 6d.

The two works as above can be had in one volume, price 10s. 6d.

SENSES AND THE INTELLECT. 8vo., 15s.

EMOTIONS AND THE WILL. 8vo., 15s.

LOGIC, DEDUCTIVE AND INDUCTIVE. Part I. 4s. Part II. 6s. 6d.

PRACTICAL ESSAYS. Cr. 8vo., 2s.

Bray.—*THE PHILOSOPHY OF NECESSITY:* or, Law in Mind as in Matter. By CHARLES BRAY. Crown 8vo., 5s.

Crozier (JOHN BEATTIE).

CIVILISATION AND PROGRESS: being the Outlines of a New System of Political, Religious and Social Philosophy. 8vo., 14s.

HISTORY OF INTELLECTUAL DEVELOPMENT: on the Lines of Modern Evolution.

Vol. I. Greek and Hindoo Thought; Græco-Roman Paganism; Judaism; and Christianity down to the Closing of the Schools of Athens by Justinian, 529 A.D. 8vo., 14s.

Davidson.—*THE LOGIC OF DEFINITION*, Explained and Applied. By WILLIAM L. DAVIDSON, M.A. Crown 8vo., 6s.

Green (THOMAS HILL).—THE WORKS OF. Edited by R. L. NETTLESHIP.

Vols. I. and II. Philosophical Works. 8vo., 16s. each.

Vol. III. Miscellanies. With Index to the three Volumes, and Memoir. 8vo., 21s.

LECTURES ON THE PRINCIPLES OF POLITICAL OBLIGATION. With Preface by BERNARD BOSANQUET. 8vo., 5s.

Hodgson (SHADWORTH H.).

TIME AND SPACE: A Metaphysical Essay. 8vo., 16s.

THE THEORY OF PRACTICE: an Ethical Inquiry. 2 vols. 8vo., 24s.

THE PHILOSOPHY OF REFLECTION. 2 vols. 8vo., 21s.

THE METAPHYSIC OF EXPERIENCE. Book I. General Analysis of Experience; Book II. Positive Science; Book III. Analysis of Conscious Action; Book IV. The Real Universe. 4 vols. 8vo., 36s. net.

Hume.—*THE PHILOSOPHICAL WORKS OF DAVID HUME.* Edited by T. H. GREEN and T. H. GROSE. 4 vols. 8vo., 28s. Or separately, ESSAYS. 2 vols. 14s. TREATISE OF HUMAN NATURE. 2 vols. 14s.

James.—*THE WILL TO BELIEVE*, and Other Essays in Popular Philosophy. By WILLIAM JAMES, M.D., LL.D., etc. Crown 8vo., 7s. 6d.

Justinian.—*THE INSTITUTES OF JUSTINIAN:* Latin Text, chiefly that of Huschke, with English Introduction, Translation, Notes, and Summary. By THOMAS C. SANDARS, M.A. 8vo., 18s.

Kant (IMMANUEL).

CRITIQUE OF PRACTICAL REASON, AND OTHER WORKS ON THE THEORY OF ETHICS. Translated by T. K. ABBOTT, B.D. With Memoir. 8vo., 12s. 6d.

FUNDAMENTAL PRINCIPLES OF THE METAPHYSIC OF ETHICS. Translated by T. K. ABBOTT, B.D. Crown 8vo, 3s.

INTRODUCTION TO LOGIC, AND HIS ESSAY ON THE MISTAKEN SUBTILTY OF THE FOUR FIGURES. Translated by T. K. ABBOTT. 8vo., 6s.

Killick.—*HANDBOOK TO MILL'S SYSTEM OF LOGIC.* By Rev. A. H. KILLICK, M.A. Crown 8vo., 3s. 6d.

Mental, Moral and Political Philosophy—*continued.*

LOGIC, RHETORIC, PSYCHOLOGY, &C.

Ladd (GEORGE TRUMBULL).

PHILOSOPHY OF KNOWLEDGE: an Inquiry into the Nature, Limits and Validity of Human Cognitive Faculty. 8vo., 18*s.*

PHILOSOPHY OF MIND: An Essay on the Metaphysics of Psychology. 8vo., 16*s.*

ELEMENTS OF PHYSIOLOGICAL PSYCHOLOGY. 8vo., 21*s.*

OUTLINES OF DESCRIPTIVE PSYCHOLOGY: a Text-Book of Mental Science for Colleges and Normal Schools. 8vo., 12*s.*

OUTLINES OF PHYSIOLOGICAL PSYCHOLOGY. 8vo., 12*s.*

PRIMER OF PSYCHOLOGY. Cr. 8vo., 5*s.* 6*d.*

Lutoslawski.—*THE ORIGIN AND GROWTH OF PLATO'S LOGIC.* With an Account of Plato's Style and of the Chronology of his Writings. By WINCENTY LUTOSLAWSKI. 8vo., 21*s.*

Max Müller.—*THE SCIENCE OF THOUGHT.* By F. Max Müller. 8vo., 21*s.*

Mill.—*ANALYSIS OF THE PHENOMENA OF THE HUMAN MIND.* By JAMES MILL. 2 vols. 8vo., 28*s.*

Mill (JOHN STUART).

A SYSTEM OF LOGIC. Cr. 8vo., 3*s.* 6*d.*

ON LIBERTY. Crown 8vo., 1*s.* 4*d.*

CONSIDERATIONS ON REPRESENTATIVE GOVERNMENT. Crown 8vo., 2*s.*

UTILITARIANISM. 8vo., 2*s.* 6*d.*

EXAMINATION OF SIR WILLIAM HAMILTON'S PHILOSOPHY. 8vo., 16*s.*

NATURE, THE UTILITY OF RELIGION, AND THEISM. Three Essays. 8vo., 5*s.*

Monck.—*AN INTRODUCTION TO LOGIC.* By WILLIAM HENRY S. MONCK, M.A. Crown 8vo., 5*s.*

Romanes.—*MIND AND MOTION AND MONISM.* By GEORGE JOHN ROMANES, LL.D., F.R.S. Cr. 8vo., 4*s.* 6*d.*

Stock.—*LECTURES IN THE LYCEUM;* or, Aristotle's Ethics for English Readers. Edited by ST. GEORGE STOCK. Crown 8vo., 7*s.* 6*d.*

Sully (JAMES).

THE HUMAN MIND: a Text-book of Psychology. 2 vols. 8vo., 21*s.*

OUTLINES OF PSYCHOLOGY. Crown 8vo., 9*s.*

THE TEACHER'S HANDBOOK OF PSYCHOLOGY. Crown 8vo., 6*s.* 6*d.*

STUDIES OF CHILDHOOD. 8vo., 10*s.* 6*d.*

CHILDREN'S WAYS: being Selections from the Author's 'Studies of Childhood'. With 25 Illustrations. Crown 8vo., 4*s.* 6*d.*

Sutherland.—*THE ORIGIN AND GROWTH OF THE MORAL INSTINCT.* By ALEXANDER SUTHERLAND, M.A. 2 vols. 8vo, 28*s.*

Swinburne.—*PICTURE LOGIC:* an Attempt to Popularise the Science of Reasoning. By ALFRED JAMES SWINBURNE, M.A. With 23 Woodcuts. Cr. 8vo., 2*s.* 6*d.*

Webb.—*THE VEIL OF ISIS:* a Series of Essays on Idealism. By THOMAS E. WEBB, LL.D., Q.C. 8vo., 10*s.* 6*d.*

Weber.—*HISTORY OF PHILOSOPHY.* By ALFRED WEBER, Professor in the University of Strasburg. Translated by FRANK THILLY, Ph.D. 8vo., 16*s.*

Whately (ARCHBISHOP).

BACON'S ESSAYS. With Annotations. 8vo., 10*s.* 6*d.*

ELEMENTS OF LOGIC. Cr. 8vo., 4*s.* 6*d.*

ELEMENTS OF RHETORIC. Cr. 8vo., 4*s.* 6*d.*

Zeller (Dr. EDWARD).

THE STOICS, EPICUREANS, AND SCEPTICS. Translated by the Rev. O. J. REICHEL, M.A. Crown 8vo., 15*s.*

OUTLINES OF THE HISTORY OF GREEK PHILOSOPHY. Translated by SARAH F. ALLEYNE and EVELYN ABBOTT, M.A., LL.D. Crown 8vo., 10*s.* 6*d.*

PLATO AND THE OLDER ACADEMY. Translated by SARAH F. ALLEYNE and ALFRED GOODWIN, B.A. Crown 8vo., 18*s.*

SOCRATES AND THE SOCRATIC SCHOOLS. Translated by the Rev. O. J. REICHEL, M.A. Crown 8vo., 10*s.* 6*d.*

ARISTOTLE AND THE EARLIER PERIPATETICS. Translated by B. F. C. COSTELLOE, M.A., and J. H. MUIRHEAD, M.A. 2 vols. Crown 8vo., 24*s.*

Mental, Moral, and Political Philosophy—*continued.*

MANUALS OF CATHOLIC PHILOSOPHY.

(Stonyhurst Series.)

A MANUAL OF POLITICAL ECONOMY. By C. S. DEVAS, M.A. Crown 8vo., 6s. 6d.

FIRST PRINCIPLES OF KNOWLEDGE. By JOHN RICKABY, S.J. Crown 8vo., 5s.

GENERAL METAPHYSICS. By JOHN RICKABY, S.J. Crown 8vo., 5s.

LOGIC. By RICHARD F. CLARKE, S.J. Crown 8vo., 5s.

MORAL PHILOSOPHY (ETHICS AND NATURAL LAW). By JOSEPH RICKABY, S.J. Crown 8vo., 5s.

NATURAL THEOLOGY. By BERNARD BOEDDER, S.J. Crown 8vo., 6s. 6d.

PSYCHOLOGY. By MICHAEL MAHER, S.J. Crown 8vo., 6s. 6d.

History and Science of Language, &c.

Davidson.—*LEADING AND IMPORTANT ENGLISH WORDS:* Explained and Exemplified. By WILLIAM L. DAVIDSON, M.A. Fcp. 8vo., 3s. 6d.

Farrar.—*LANGUAGE AND LANGUAGES:* By F. W. FARRAR, D.D., Dean of Canterbury. Crown 8vo., 6s.

Graham. — *ENGLISH SYNONYMS,* Classified and Explained: with Practical Exercises. By G. F. GRAHAM. Fcp. 8vo., 6s.

Max Müller (F.).

THE SCIENCE OF LANGUAGE.—Founded on Lectures delivered at the Royal Institution in 1861 and 1863. 2 vols. Crown 8vo., 10s.

BIOGRAPHIES OF WORDS, AND THE HOME OF THE ARYAS. Crown 8vo., 5s.

Roget.—*THESAURUS OF ENGLISH WORDS AND PHRASES.* Classified and Arranged so as to Facilitate the Expression of Ideas and assist in Literary Composition. By PETER MARK ROGET, M.D., F.R.S. With full Index. Crown 8vo., 10s. 6d.

Whately.—*ENGLISH SYNONYMS.* By E. JANE WHATELY. Fcp. 8vo., 3s.

Political Economy and Economics.

Ashley.—*ENGLISH ECONOMIC HISTORY AND THEORY.* By W. J. ASHLEY, M.A. Cr. 8vo., Part I., 5s. Part II., 10s. 6d.

Bagehot.—*ECONOMIC STUDIES.* By WALTER BAGEHOT. Crown 8vo., 3s. 6d.

Brassey.—*PAPERS AND ADDRESSES ON WORK AND WAGES.* By Lord BRASSEY. Edited by J. POTTER, and with Introduction by GEORGE HOWELL, M.P. Crown 8vo., 5s.

Channing.—*THE TRUTH ABOUT AGRICULTURAL DEPRESSION:* an Economic Study of the Evidence of the Royal Commission. By FRANCIS ALLSTON CHANNING, M.P., one of the Commission. Crown 8vo., 6s.

Devas.—*A MANUAL OF POLITICAL ECONOMY.* By C. S. DEVAS, M.A. Cr. 8vo., 6s. 6d. (*Manuals of Catholic Philosophy.*)

Jordan.—*THE STANDARD OF VALUE.* By WILLIAM LEIGHTON JORDAN. Cr. 8vo., 6s.

Leslie.—*ESSAYS ON POLITICAL ECONOMY.* By T. E. CLIFFE LESLIE, Hon. LL.D., Dubl. 8vo, 10s. 6d.

Macleod (HENRY DUNNING).

ECONOMICS FOR BEGINNERS. Crown 8vo., 2s.

THE ELEMENTS OF ECONOMICS. 2 vols. Crown 8vo., 3s. 6d. each.

BIMETALISM. 8vo., 5s. net.

THE ELEMENTS OF BANKING. Cr. 8vo., 3s. 6d.

THE THEORY AND PRACTICE OF BANKING. Vol. I. 8vo., 12s. Vol. II. 14s.

THE THEORY OF CREDIT. 8vo. In 1 Vol., 30s. net; or separately, Vol. I., 10s. net. Vol. II., Part I., 10s. net. Vol. II., Part II., 10s. net.

Political Economy and Economics—*continued.*

Mill.—*Political Economy.* By John Stuart Mill.
Popular Edition. Crown 8vo., 3s. 6d.
Library Edition. 2 vols. 8vo., 30s.

Mulhall.—*Industries and Wealth of Nations.* By Michael G. Mulhall, F.S.S. With 32 full-page Diagrams. Crown 8vo., 8s. 6d.

Symes.—*Political Economy:* a Short Text-book of Political Economy. With Problems for Solution, and Hints for Supplementary Reading; also a Supplementary Chapter on Socialism. By Professor J. E. Symes, M.A., of University College, Nottingham. Crown 8vo., 2s. 6d.

Toynbee.—*Lectures on the Industrial Revolution of the 18th Century in England:* Popular Addresses, Notes and other Fragments. By Arnold Toynbee. With a Memoir of the Author by Benjamin Jowett, D.D. 8vo., 10s. 6d.

Webb (Sidney and Beatrice).
The History of Trade Unionism. With Map and full Bibliography of the Subject. 8vo., 18s.
Industrial Democracy: a Study in Trade Unionism. 2 vols. 8vo., 25s. net.
Problems of Modern Industry: Essays.

STUDIES IN ECONOMICS AND POLITICAL SCIENCE.

Issued under the auspices of the London School of Economics and Political Science.

German Social Democracy. By Bertrand Russell, B.A. With an Appendix on Social Democracy and the Woman Question in Germany by Alys Russell, B.A. Crown 8vo., 3s. 6d.

Select Documents Illustrating the History of Trade Unionism.
1. The Tailoring Trade. Edited by W. F. Galton. With a Preface by Sidney Webb, LL.B. Crown 8vo., 5s.

The Referendum in Switzerland. By Simon Deploige, Advocate. With a Letter on the 'The Referendum in Belgium' by M. J. Van Den Heuvel, Professor of International Law at the University of Louvain. Translated into English by C. P. Trevelyan, M.P. Edited, with Notes, Introduction and Appendices, by Lilian Tomn. Crown 8vo., 7s. 6d.

The History of Local Rates in England: Five Lectures. By Edwin Cannan, M.A. Crown 8vo., 2s. 6d.

Local Variations in Wages. By F. W. Lawrence, M.A., Fellow of Trinity College, Cambridge. Medium 4to., 8s. 6d.

The Economic Policy of Colbert. By A. J. Sargent, B.A., Senior Hulme Exhibitioner of Brasenose College, Oxford. Crown 8vo., 2s. 6d.

Select Documents Illustrating the State Regulation of Wages. Edited, with Introduction and Notes, by W. A. S. Hewins, M.A. [*In preparation.*

Evolution, Anthropology, &c.

Clodd (Edward).
The Story of Creation: a Plain Account of Evolution. With 77 Illustrations. Crown 8vo., 3s. 6d.
A Primer of Evolution: being a Popular Abridged Edition of 'The Story of Creation'. With Illustrations. Fcp. 8vo., 1s. 6d.

Lang (Andrew).
Custom and Myth: Studies of Early Usage and Belief. With 15 Illustrations. Crown 8vo., 3s. 6d.
Myth, Ritual, and Religion. 2 vols. Crown 8vo., 7s.

Lubbock.—*The Origin of Civilisation,* and the Primitive Condition of Man. By Sir J. Lubbock, Bart., M.P. With 5 Plates and 20 Illustrations in the Text. 8vo., 18s.

Romanes (George John).
Darwin, and after Darwin: an Exposition of the Darwinian Theory, and a Discussion on Post-Darwinian Questions.
Part I. The Darwinian Theory. With Portrait of Darwin and 125 Illustrations. Crown 8vo., 10s. 6d.
Part II. Post-Darwinian Questions: Heredity and Utility. With Portrait of the Author and 5 Illustrations. Cr. 8vo., 10s. 6d.
Part III. Post-Darwinian Questions: Isolation and Physiological Selection. Crown 8vo., 5s.

An Examination of Weismannism. Crown 8vo., 6s.

Essays. Edited by C. Lloyd Morgan, Principal of University College, Bristol. Crown 8vo., 6s.

Classical Literature, Translations, &c.

Abbott.—*Hellenica.* A Collection of Essays on Greek Poetry, Philosophy, History, and Religion. Edited by Evelyn Abbott, M.A., LL.D. Crown 8vo., 7*s.* 6*d.*

Æschylus.—*Eumenides of Æschylus.* With Metrical English Translation. By J. F. Davies. 8vo., 7*s.*

Aristophanes. — *The Acharnians of Aristophanes*, translated into English Verse. By R. Y. Tyrrell. Crown 8vo., 1*s.*

Aristotle.—*Youth and Old Age, Life and Death, and Respiration.* Translated, with Introduction and Notes, by W. Ogle, M.A., M.D. 8vo., 7*s.* 6*d.*

Becker (W. A.), Translated by the Rev. F. Metcalfe, B.D.

Gallus: or, Roman Scenes in the Time of Augustus. With Notes and Excursuses. With 26 Illustrations. Post 8vo., 3*s.* 6*d.*

Charicles: or, Illustrations of the Private Life of the Ancient Greeks. With Notes and Excursuses. With 26 Illustrations. Post 8vo., 3*s.* 6*d.*

Butler—*The Authoress of the Odyssey, where and when She wrote, who She was, the Use She made of the Iliad, and how the Poem grew under Her hands.* By Samuel Butler, Author of 'Erewhon,' etc. With Illustrations and 4 Maps. 8vo., 10*s.* 6*d.*

Cicero.—*Cicero's Correspondence.* By R. Y. Tyrrell. Vols. I., II., III., 8vo., each 12*s.* Vol. IV., 15*s.* Vol. V., 14*s.*

Homer.—*The Iliad of Homer.* Rendered into English Prose for the use of those who cannot read the original. By Samuel Butler, Author of 'Erewhon,' etc. Crown 8vo., 7*s.* 6*d.*

Horace.—*The Works of Horace, rendered into English Prose.* With Life, Introduction and Notes. By William Coutts, M.A. Crown 8vo., 5*s.* net.

Lang.—*Homer and the Epic.* By Andrew Lang. Crown 8vo., 9*s.* net.

Lucan.—*The Pharsalia of Lucan.* Translated into Blank Verse. By Sir Edward Ridley. 8vo., 14*s.*

Mackail.—*Select Epigrams from the Greek Anthology.* By J. W. Mackail. Edited with a Revised Text, Introduction, Translation, and Notes. 8vo., 16*s.*

Rich.—*A Dictionary of Roman and Greek Antiquities.* By A. Rich, B.A. With 2000 Woodcuts. Crown 8vo., 7*s.* 6*d.*

Sophocles.—Translated into English Verse. By Robert Whitelaw, M.A., Assistant Master in Rugby School. Cr. 8vo., 8*s.* 6*d.*

Tacitus. — *The History of P. Cornelius Tacitus.* Translated into English, with an Introduction and Notes, Critical and Explanatory, by Albert William Quill, M.A., T.C.D. 2 vols. Vol. I. 8vo., 7*s.* 6*d.* Vol. II., 8vo. 12*s.* 6*d.*

Tyrrell. — *Dublin Translations into Greek and Latin Verse.* Edited by R. Y. Tyrrell. 8vo., 6*s.*

Virgil.

The Æneid of Virgil. Translated into English Verse by John Conington. Crown 8vo., 6*s.*

The Poems of Virgil. Translated into English Prose by John Conington. Crown 8vo., 6*s.*

The Æneid of Virgil, freely translated into English Blank Verse. By W. J. Thornhill. Crown 8vo., 7*s.* 6*d.*

The Æneid of Virgil. Translated into English Verse by James Rhoades. Books I.-VI. Crown 8vo., 5*s.* Books VII.-XII. Crown 8vo., 5*s.*

The Eclogues and Georgics of Virgil. Translated into English Prose by J. W. Mackail, Fellow of Balliol College, Oxford. 16mo., 5*s.*

Wilkins.—*The Growth of the Homeric Poems.* By G. Wilkins. 8vo., 6*s.*

Poetry and the Drama.

Armstrong (G. F. SAVAGE).

POEMS: Lyrical and Dramatic. Fcp. 8vo., 6*s.*

KING SAUL. (The Tragedy of Israel, Part I.) Fcp. 8vo., 5*s.*

KING DAVID. (The Tragedy of Israel, Part II.) Fcp. 8vo., 6*s.*

KING SOLOMON. (The Tragedy of Israel, Part III.) Fcp. 8vo., 6*s.*

UGONE: a Tragedy. Fcp. 8vo., 6*s.*

A GARLAND FROM GREECE: Poems. Fcp. 8vo., 7*s.* 6*d.*

STORIES OF WICKLOW: Poems. Fcp. 8vo., 7*s.* 6*d.*

MEPHISTOPHELES IN BROADCLOTH: a Satire. Fcp. 8vo., 4*s.*

ONE IN THE INFINITE: a Poem. Crown 8vo., 7*s.* 6*d.*

Armstrong.—*THE POETICAL WORKS OF EDMUND J. ARMSTRONG.* Fcp. 8vo., 5*s.*

Arnold.—*THE LIGHT OF THE WORLD:* or, The Great Consummation. By Sir EDWIN ARNOLD. With 14 Illustrations after HOLMAN HUNT. Crown 8vo., 6*s.*

Barraud.—*THE LAY OF THE KNIGHTS.* By the Rev. C. W. BARRAUD, S.J., Author of 'St. Thomas of Canterbury, and other Poems'. Crown 8vo., 4*s.*

Bell (MRS. HUGH).

CHAMBER COMEDIES: a Collection of Plays and Monologues for the Drawing Room. Crown 8vo., 6*s.*

FAIRY TALE PLAYS, AND HOW TO ACT THEM. With 91 Diagrams and 52 Illustrations. Crown 8vo., 6*s.*

Coleridge.—*SELECTIONS FROM.* With Introduction by ANDREW LANG. With 18 Illustrations by PATTEN WILSON. Crown 8vo., 3*s.* 6*d.*

Douglas.—*POEMS OF A COUNTRY GENTLEMAN.* By Sir GEORGE DOUGLAS, Bart., Author of 'The Fireside Tragedy'. Crown 8vo., 3*s.* 6*d.*

Goethe.

THE FIRST PART OF THE TRAGEDY OF FAUST IN ENGLISH. By THOS. E. WEBB, LL.D., sometime Fellow of Trinity College; Professor of Moral Philosophy in the University of Dublin, etc. New and Cheaper Edition, with *THE DEATH OF FAUST*, from the Second Part. Crown 8vo., 6*s.*

Gore-Booth.—*POEMS.* By EVA GORE-BOOTH. Fcp. 8vo., 5*s.*

Ingelow (JEAN).

POETICAL WORKS. Complete in One Volume. Crown 8vo., 7*s.* 6*d.*

POETICAL WORKS. 2 vols. Fcp. 8vo., 12*s.*

LYRICAL AND OTHER POEMS. Selected from the Writings of JEAN INGELOW. Fcp. 8vo., 2*s.* 6*d.* cloth plain, 3*s.* cloth gilt.

Lang (ANDREW).

GRASS OF PARNASSUS. Fcp. 8vo., 2*s.* 6*d.* net.

THE BLUE POETRY BOOK. Edited by ANDREW LANG. With 100 Illustrations. Crown 8vo., 6*s.*

Layard and Corder.—*SONGS IN MANY MOODS.* By NINA F. LAYARD; *THE WANDERING ALBATROSS*, etc. By ANNIE CORDER. In One Volume. Crown 8vo., 5*s.*

Lecky.—*POEMS.* By the Right Hon. W. E. H. LECKY. Fcp. 8vo., 5*s.*

Lytton (THE EARL OF), (OWEN MEREDITH).

THE WANDERER. Cr. 8vo., 10*s.* 6*d.*

LUCILE. Crown 8vo., 10*s.* 6*d.*

SELECTED POEMS. Cr. 8vo., 10*s.* 6*d.*

Macaulay.—*LAYS OF ANCIENT ROME, WITH 'IVRY' AND 'THE ARMADA'.* By Lord MACAULAY.

Illustrated by G. SCHARF. Fcp. 4to., 10*s.* 6*d.*

——— Bijou Edition. 18mo., 2*s.* 6*d.* gilt top.

——— Popular Edition. Fcp. 4to., 6*d.* sewed, 1*s.* cloth.

Illustrated by J. R. WEGUELIN. Crown 8vo., 3*s.* 6*d.*

Annotated Edition. Fcp. 8vo., 1*s.* sewed, 1*s.* 6*d.* cloth.

Poetry and the Drama—*continued.*

MacDonald (GEORGE, LL.D.).

A BOOK OF STRIFE, IN THE FORM OF THE DIARY OF AN OLD SOUL: Poems. 18mo., 6s.

RAMPOLLI: GROWTHS FROM A LONG-PLANTED ROOT: being Translations, New and Old (mainly in verse), chiefly from the German; along with 'A Year's Diary of an Old Soul'. Crown 8vo., 6s.

Moffat.—*CRICKETY-CRICKET:* Rhymes and Parodies. By DOUGLAS MOFFAT. With Frontispiece by Sir FRANK LOCKWOOD, Q.C., M.P., and 53 Illustrations by the Author. Crown 8vo, 2s. 6d.

Moon.—*POEMS OF LOVE AND HOME,* etc. By GEORGE WASHINGTON MOON, Hon. F.R.S.L., Author of 'Elijah,' etc. 16mo., 2s. 6d.

Morris (WILLIAM).

POETICAL WORKS—LIBRARY EDITION. Complete in Eleven Volumes. Crown 8vo., price 6s. each.

THE EARTHLY PARADISE. 4 vols. 6s. each.

THE LIFE AND DEATH OF JASON. 6s.

THE DEFENCE OF GUENEVERE, and other Poems. 6s.

THE STORY OF SIGURD THE VOLSUNG, AND THE FALL OF THE NIBLUNGS. 6s.

LOVE IS ENOUGH; or, the Freeing of Pharamond: A Morality; and *POEMS BY THE WAY.* 6s.

THE ODYSSEY OF HOMER. Done into English Verse. 6s.

THE ÆNEIDS OF VIRGIL. Done into English Verse. 6s.

THE TALE OF BEOWULF, SOMETIME KING OF THE FOLK OF THE WEDERGEATS. Translated by WILLIAM MORRIS and A. J. WYATT. Crown 8vo., 6s.

Certain of the POETICAL WORKS may also be had in the following Editions:—

THE EARTHLY PARADISE.

Popular Edition. 5 vols. 12mo., 25s.; or 5s. each, sold separately.

The same in Ten Parts, 25s.; or 2s. 6d. each, sold separately.

Cheap Edition, in 1 vol. Crown 8vo., 7s. 6d.

POEMS BY THE WAY. Square crown 8vo., 6s.

*** For Mr. William Morris's Prose Works, see pp. 22 and 31.

Nesbit.—*LAYS AND LEGENDS.* By E. NESBIT (Mrs. HUBERT BLAND). First Series. Crown 8vo., 3s. 6d. Second Series. With Portrait. Crown 8vo., 5s.

Riley (JAMES WHITCOMB).

OLD FASHIONED ROSES: Poems. 12mo., 5s.

A CHILD-WORLD: POEMS. Fcp. 8vo., 5s.

RUBÁIYÁT OF DOC SIFERS. With 43 Illustrations by C. M RELYEA. Crown 8vo.

THE GOLDEN YEAR. From the Verse and Prose of JAMES WHITCOMB RILEY. Compiled by CLARA E. LAUGHLIN. Fcp. 8vo., 5s.

Romanes.—*A SELECTION FROM THE POEMS OF GEORGE JOHN ROMANES, M.A., LL.D., F.R.S.* With an Introduction by T. HERBERT WARREN, President of Magdalen College, Oxford. Crown 8vo., 4s. 6d.

Russell.—*SONNETS ON THE SONNET:* an Anthology. Compiled by the Rev. MATTHEW RUSSELL, S.J. Crown 8vo., 3s. 6d.

Samuels.—*SHADOWS, AND OTHER POEMS.* By E. SAMUELS. With 7 Illustrations by W. FITZGERALD, M.A. Crown 8vo., 3s. 6d.

Shakespeare.—*BOWDLER'S FAMILY SHAKESPEARE.* With 36 Woodcuts. 1 vol. 8vo., 14s. Or in 6 vols. Fcp. 8vo., 21s.

THE SHAKESPEARE BIRTHDAY BOOK. By MARY F. DUNBAR. 32mo., 1s. 6d.

Tupper.—*POEMS.* By JOHN LUCAS TUPPER. Selected and Edited by WILLIAM MICHAEL ROSSETTI. Crown 8vo., 5s.

Wordsworth. — *SELECTED POEMS.* By ANDREW LANG. With Photogravure Frontispiece of Rydal Mount. With 16 Illustrations and numerous Initial Letters. By ALFRED PARSONS, A.R.A. Crown 8vo., gilt edges, 3s. 6d.

Wordsworth and Coleridge.—*A DESCRIPTION OF THE WORDSWORTH AND COLERIDGE MANUSCRIPTS IN THE POSSESSION OF MR. T. NORTON LONGMAN.* Edited, with Notes, by W. HALE WHITE. With 3 Facsimile Reproductions. 4to., 10s. 6d.

Fiction, Humour, &c.

Allingham.—*Crooked Paths.* By Francis Allingham. Crown 8vo., 6s

Anstey.—*Voces Populi.* Reprinted from 'Punch'. By F. Anstey, Author of 'Vice Versâ'. First Series. With 20 Illustrations by J. Bernard Partridge. Crown 8vo., 3s. 6d.

Beaconsfield (The Earl of).

Novels and Tales. Complete in 11 vols. Crown 8vo., 1s. 6d. each.

Vivian Grey.	Sybil.
The Young Duke, etc.	Henrietta Temple.
Alroy, Ixion, etc.	Venetia.
Contarini Fleming, etc.	Coningsby.
Tancred.	Lothair.
	Endymion.

Novels and Tales. The 'Hughenden' Edition. With 2 Portraits and 11 Vignettes. 11 vols. Crown 8vo., 42s.

Birt.—*Castle Czvargas:* a Romance. Being a Plain Story of the Romantic Adventures of Two Brothers, Told by the Younger of Them. Edited by Archibald Birt. Crown 8vo., 6s.

Deland (Margaret).

Philip and His Wife. Crown 8vo., 2s. 6d.

The Wisdom of Fools. Stories. Crown 8vo., 5s.

Diderot. — *Rameau's Nephew:* a Translation from Diderot's Autographic Text. By Sylvia Margaret Hill. Crown 8vo., 3s. 6d.

Dougall.—*Beggars All.* By L. Dougall. Crown 8vo., 3s. 6d.

Doyle (A. Conan).

Micah Clarke: A Tale of Monmouth's Rebellion. With 10 Illustrations. Cr. 8vo., 3s. 6d.

The Captain of the Polestar, and other Tales. Cr. 8vo., 3s. 6d.

The Refugees: A Tale of the Huguenots. With 25 Illustrations. Cr. 8vo., 3s. 6d.

The Stark Munro Letters. Cr. 8vo, 3s. 6d.

Farrar (F. W., Dean of Canterbury).

Darkness and Dawn: or, Scenes in the Days of Nero. An Historic Tale. Cr. 8vo., 7s. 6d.

Gathering Clouds: a Tale of the Days of St. Chrysostom. Cr. 8vo., 7s. 6d.

Fowler (Edith H.).

The Young Pretenders. A Story of Child Life. With 12 Illustrations by Philip Burne-Jones. Crown 8vo., 6s.

The Professor's Children. With 24 Illustrations by Ethel Kate Burgess. Crown 8vo., 6s.

Froude.—*The Two Chiefs of Dunboy:* an Irish Romance of the Last Century. By James A. Froude. Cr. 8vo., 3s. 6d.

Gilkes.—*Kallistratus:* an Autobiography. A Story of Hannibal and the Second Punic War. By A. H. Gilkes, M.A., Master of Dulwich College. With 3 Illustrations by Maurice Greiffenhagen. Crown 8vo., 6s.

Graham.—*The Red Scaur:* A Story of the North Country. By P. Anderson Graham. Crown 8vo., 6s.

Gurdon.—*Memories and Fancies:* Suffolk Tales and other Stories; Fairy Legends; Poems; Miscellaneous Articles. By the late Lady Camilla Gurdon, Author of 'Suffolk Folk-Lore'. Crown 8vo., 5s.

Haggard (H. Rider).

Swallow: a Tale of the Great Trek. With 8 Illustrations. Crown 8vo., 6s.

Dr. Therne. Crown 8vo., 3s. 6d.

Heart of the World. With 15 Illustrations. Crown 8vo., 3s. 6d.

Joan Haste. With 20 Illustrations. Crown 8vo., 3s. 6d.

The People of the Mist. With 16 Illustrations. Crown 8vo., 3s. 6d.

Montezuma's Daughter. With 24 Illustrations. Crown 8vo., 3s. 6d.

She. With 32 Illustrations. Crown 8vo., 3s. 6d.

Allan Quatermain. With 31 Illustrations. Crown 8vo., 3s. 6d.

Maiwa's Revenge. Cr. 8vo., 1s. 6d.

Colonel Quaritch, V.C. With Frontispiece and Vignette. Cr. 8vo., 3s. 6d.

Cleopatra. With 29 Illustrations. Crown 8vo., 3s. 6d.

Beatrice. With Frontispiece and Vignette. Cr. 8vo., 3s. 6d.

Fiction, Humour, &c.—*continued.*

Haggard (H. RIDER)—*continued.*

ERIC BRIGHTEYES. With 51 Illustrations. Crown 8vo., 3s. 6d.

NADA THE LILY. With 23 Illustrations. Crown 8vo., 3s. 6d.

ALLAN'S WIFE. With 34 Illustrations. Crown 8vo., 3s. 6d.

THE WITCH'S HEAD. With 16 Illustrations. Crown 8vo., 3s. 6d.

MR. MEESON'S WILL. With 16 Illustrations. Crown 8vo., 3s. 6d.

DAWN. With 16 Illustrations. Cr. 8vo., 3s. 6d.

Haggard and Lang.—*THE WORLD'S DESIRE.* By H. RIDER HAGGARD and ANDREW LANG. With 27 Illustrations. Crown 8vo., 3s. 6d.

Harte.—*IN THE CARQUINEZ WOODS.* By BRET HARTE. Crown 8vo., 3s. 6d.

Hope.—*THE HEART OF PRINCESS OSRA.* By ANTHONY HOPE. With 9 Illustrations. Crown 8vo., 6s.

Hornung.—*THE UNBIDDEN GUEST.* By E. W. HORNUNG. Crown 8vo., 3s. 6d.

Jerome.—*SKETCHES IN LAVENDER: BLUE AND GREEN.* By JEROME K. JEROME. Crown 8vo., 3s. 6d.

Joyce.—*OLD CELTIC ROMANCES.* Twelve of the most beautiful of the Ancient Irish Romantic Tales. Translated from the Gaelic. By P. W. JOYCE, LL.D. Crown 8vo., 3s. 6d.

Lang.—*A MONK OF FIFE;* a Story of the Days of Joan of Arc. By ANDREW LANG. With 13 Illustrations by SELWYN IMAGE. Crown 8vo., 3s. 6d.

Levett-Yeats (S.).

THE CHEVALIER D'AURIAC. Crown 8vo., 3s. 6d.

A GALAHAD OF THE CREEKS, and other Stories. Crown 8vo., 6s.

THE HEART OF DENISE, and other Tales. Crown 8vo., 6s.

Lyall (EDNA).

THE AUTOBIOGRAPHY OF A SLANDER. Fcp. 8vo., 1s., sewed.

Presentation Edition. With 20 Illustrations by LANCELOT SPEED. Crown 8vo., 2s. 6d. net.

THE AUTOBIOGRAPHY OF A TRUTH. Fcp. 8vo., 1s., sewed; 1s. 6d., cloth.

DOREEN. The Story of a Singer. Crown 8vo., 6s.

WAYFARING MEN. Crown 8vo., 6s.

HOPE THE HERMIT: a Romance of Borrowdale. Crown 8vo., 6s.

Max Müller.—*DEUTSCHE LIEBE (GERMAN LOVE):* Fragments from the Papers of an Alien. Collected by F. MAX MÜLLER. Translated from the German by G. A. M. Crown 8vo., 5s.

Melville (G. J. WHYTE).

The Gladiators.	Holmby House.
The Interpreter.	Kate Coventry.
Good for Nothing.	Digby Grand.
The Queen's Maries.	General Bounce.

Crown 8vo., 1s. 6d. each.

Merriman.—*FLOTSAM:* A Story of the Indian Mutiny. By HENRY SETON MERRIMAN. Crown 8vo., 3s. 6d.

Morris (WILLIAM).

THE SUNDERING FLOOD. Cr. 8vo., 7s. 6d.

THE WATER OF THE WONDROUS ISLES. Crown 8vo., 7s. 6d.

THE WELL AT THE WORLD'S END. 2 vols. 8vo., 28s.

THE STORY OF THE GLITTERING PLAIN, which has been also called The Land of the Living Men, or The Acre of the Undying. Square post 8vo., 5s. net.

THE ROOTS OF THE MOUNTAINS, wherein is told somewhat of the Lives of the Men of Burgdale, their Friends, their Neighbours, their Foemen, and their Fellows-in-Arms. Written in Prose and Verse. Square crown 8vo., 8s.

A TALE OF THE HOUSE OF THE WOLFINGS, and all the Kindreds of the Mark. Written in Prose and Verse. Square crown 8vo., 6s.

A DREAM OF JOHN BALL, AND A KING'S LESSON. 12mo., 1s. 6d.

NEWS FROM NOWHERE; or, An Epoch of Rest. Being some Chapters from an Utopian Romance. Post 8vo., 1s. 6d.

*** For Mr. William Morris's Poetical Works, see p. 20.

Newman (CARDINAL).

LOSS AND GAIN: The Story of a Convert. Crown 8vo. Cabinet Edition, 6s.; Popular Edition, 3s. 6d.

CALLISTA: A Tale of the Third Century. Crown 8vo. Cabinet Edition, 6s.; Popular Edition, 3s. 6d.

Oliphant.—*OLD MR. TREDGOLD.* By Mrs. OLIPHANT. Crown 8vo., 2s. 6d.

Phillipps-Wolley.—*SNAP:* a Legend of the Lone Mountain. By C. PHILLIPPS-WOLLEY. With 13 Illustrations. Crown 8vo., 3s. 6d.

Fiction, Humour, &c.—*continued.*

Raymond.—*Two Men o' Mendip.* By Walter Raymond, Author of 'Gentleman Upcott's Daughter,' etc. Cr. 8vo., 6s.

Reader.—*Priestess and Queen:* a Tale of the White Race of Mexico; being the Adventures of Ignigene and her Twenty-six Fair Maidens. By Emily E. Reader. Illustrated by Emily K. Reader. Crown 8vo., 6s.

Rhoscomyl (Owen).

The Jewel of Ynys Galon: being a hitherto unprinted Chapter in the History of the Sea Rovers. With 12 Illustrations by Lancelot Speed. Cr. 8vo., 3s. 6d.

For the White Rose of Arno: a Story of the Jacobite Rising of 1745. Crown 8vo., 6s.

Sewell (Elizabeth M.).

A Glimpse of the World	Amy Herbert.
Laneton Parsonage.	Cleve Hall.
Margaret Percival.	Gertrude.
Katharine Ashton.	Home Life.
The Earl's Daughter.	After Life.
The Experience of Life.	Ursula. Ivors.

Cr. 8vo., 1s. 6d. each cloth plain. 2s. 6d. each cloth extra, gilt edges.

Stebbing.—*Probable Tales.* Edited by William Stebbing. Crown 8vo., 4s. 6d.

Stevenson (Robert Louis).

The Strange Case of Dr. Jekyll and Mr. Hyde. Fcp. 8vo., 1s. sewed. 1s. 6d. cloth.

The Strange Case of Dr. Jekyll and Mr. Hyde; with other Fables. Crown 8vo., 3s. 6d.

More New Arabian Nights—The Dynamiter. By Robert Louis Stevenson and Fanny van de Grift Stevenson. Crown 8vo., 3s. 6d.

The Wrong Box. By Robert Louis Stevenson and Lloyd Osbourne. Crown 8vo., 3s. 6d.

Suttner.—*Lay Down Your Arms* (*Die Waffen Nieder*): The Autobiography of Martha von Tilling. By Bertha von Suttner. Translated by T. Holmes. Cr. 8vo., 1s. 6d.

Taylor.—*Early Italian Love-Stories.* Taken from the Originals by Una Taylor. With 13 Illustrations by Henry J. Ford. Crown 4to., 15s. net.

Trollope (Anthony).

The Warden. Cr. 8vo., 1s. 6d.

Barchester Towers. Cr. 8vo., 1s. 6d.

Walford (L. B.).

The Intruders. Crown 8vo., 6s.

Leddy Marget. Crown 8vo., 6s.

Iva Kildare: a Matrimonial Problem. Crown 8vo., 6s.

Mr. Smith: a Part of his Life. Crown 8vo., 2s. 6d.

The Baby's Grandmother. Cr. 8vo., 2s. 6d.

Cousins. Crown 8vo., 2s. 6d.

Troublesome Daughters. Cr 8vo., 2s. 6d.

Pauline. Crown 8vo., 2s. 6d.

Dick Netherby. Cr. 8vo., 2s. 6d.

The History of a Week. Cr. 8vo. 2s. 6d.

A Stiff-necked Generation. Cr. 8vo. 2s. 6d.

Nan, and other Stories. Cr. 8vo., 2s. 6d.

The Mischief of Monica. Cr. 8vo., 2s. 6d.

The One Good Guest. Cr. 8vo. 2s. 6d.

'*Ploughed,*' and other Stories. Crown 8vo., 2s. 6d.

The Matchmaker. Cr. 8vo., 2s. 6d.

Ward.—*One Poor Scruple.* By Mrs. Wilfrid Ward. Crown 8vo., 6s.

Watson.—*Racing and 'Chasing:* a Collection of Sporting Stories. By Alfred E. T. Watson, Editor of the 'Badminton Magazine'. With 16 Plates and 36 Illustrations in the Text. Crown 8vo., 7s. 6d.

Weyman (Stanley).

The House of the Wolf. With Frontispiece and Vignette. Crown 8vo., 3s. 6d.

A Gentleman of France. With Frontispiece and Vignette. Cr. 8vo., 6s.

The Red Cockade. With Frontispiece and Vignette. Crown 8vo., 6s.

Shrewsbury. With 24 Illustrations by Claude A. Shepperson. Cr. 8vo., 6s.

Whishaw (Fred.).

A Boyar of the Terrible: a Romance of the Court of Ivan the Cruel, First Tzar of Russia. With 12 Illustrations by H. G. Massey, A.R.E. Crown 8vo., 6s.

A Tsar's Gratitude: A Story of Modern Russia. Crown 8vo., 6s.

Woods.—*Weeping Ferry,* and other Stories. By Margaret L. Woods, Author of 'A Village Tragedy'. Crown 8vo., 6s.

Popular Science (Natural History, &c.).

Beddard. — *The Structure and Classification of Birds.* By Frank E. Beddard, M.A., F.R.S., Prosector and Vice-Secretary of the Zoological Society of London. With 252 Illustrations. 8vo., 21*s.* net.

Butler.—*Our Household Insects.* An Account of the Insect-Pests found in Dwelling-Houses. By Edward A. Butler, B.A., B.Sc. (Lond.). With 113 Illustrations. Crown 8vo., 3*s.* 6*d.*

Furneaux (W.).

The Outdoor World; or The Young Collector's Handbook. With 18 Plates (16 of which are coloured), and 549 Illustrations in the Text. Crown 8vo., 7*s.* 6*d.*

Butterflies and Moths (British). With 12 coloured Plates and 241 Illustrations in the Text. Crown 8vo., 7*s.* 6*d.*

Life in Ponds and Streams. With 8 coloured Plates and 331 Illustrations in the Text. Crown 8vo., 7*s.* 6*d.*

Hartwig (Dr. George).

The Sea and its Living Wonders. With 12 Plates and 303 Woodcuts. 8vo., 7*s.* net.

The Tropical World. With 8 Plates and 172 Woodcuts. 8vo., 7*s.* net.

The Polar World. With 3 Maps, 8 Plates and 85 Woodcuts. 8vo., 7*s.* net.

The Subterranean World. With 3 Maps and 80 Woodcuts. 8vo., 7*s.* net.

The Aerial World. With Map, 8 Plates and 60 Woodcuts. 8vo., 7*s.* net.

Heroes of the Polar World. With 19 Illustrations. Cr. 8vo., 2*s.*

Wonders of the Tropical Forests. With 40 Illustrations. Cr. 8vo., 2*s.*

Workers under the Ground. With 29 Illustrations. Cr. 8vo., 2*s.*

Marvels Over our Heads. With 29 Illustrations. Cr. 8vo., 2*s.*

Sea Monsters and Sea Birds. With 75 Illustrations. Cr. 8vo., 2*s.* 6*d.*

Denizens of the Deep. With 117 Illustrations. Cr. 8vo., 2*s.* 6*d.*

Hartwig (Dr. George)—*continued.*

Volcanoes and Earthquakes. With 30 Illustrations. Cr. 8vo., 2*s.* 6*d.*

Wild Animals of the Tropics. With 66 Illustrations. Cr. 8vo., 3*s.* 6*d.*

Helmholtz.—*Popular Lectures on Scientific Subjects.* By Hermann von Helmholtz. With 68 Woodcuts. 2 vols. Cr. 8vo., 3*s.* 6*d.* each.

Hudson (W. H.).

British Birds. With a Chapter on Structure and Classification by Frank E. Beddard, F.R.S. With 16 Plates (8 of which are Coloured), and over 100 Illustrations in the Text. Cr. 8vo., 7*s.* 6*d.*

Birds in London. With 17 Plates and 15 Illustrations in the Text, by Bryan Hook, A. D. McCormick, and from Photographs from Nature, by R. B. Lodge. 8vo., 12*s.*

Proctor (Richard A.).

Light Science for Leisure Hours. Familiar Essays on Scientific Subjects. 3 vols. Cr. 8vo., 5*s.* each. Vol. I., Cheap Edition. Crown 8vo., 3*s.* 6*d.*

Rough Ways made Smooth. Familiar Essays on Scientific Subjects. Crown 8vo., 3*s.* 6*d.*

Pleasant Ways in Science. Crown 8vo., 3*s.* 6*d.*

Nature Studies. By R. A. Proctor, Grant Allen, A. Wilson, T. Foster and E. Clodd. Crown 8vo., 3*s.* 6*d.*

Leisure Readings. By R. A. Proctor, E. Clodd, A. Wilson, T. Foster and A. C. Ranyard. Cr. 8vo., 3*s.* 6*d.*

*** *For Mr. Proctor's other books see pp.* 13, 28 *and* 31, *and Messrs. Longmans & Co.'s Catalogue of Scientific Works.*

Stanley.—*A Familiar History of Birds.* By E. Stanley, D.D., formerly Bishop of Norwich. With 160 Illustrations. Cr. 8vo., 3*s.* 6*d.*

Popular Science (Natural History, &c.)—*continued.*

Wood (Rev. J. G.).

Homes without Hands: A Description of the Habitations of Animals, classed according to the Principle of Construction. With 140 Illustrations. 8vo., 7s. net.

Insects at Home: A Popular Account of British Insects, their Structure, Habits and Transformations. With 700 Illustrations. 8vo., 7s. net.

Out of Doors; a Selection of Original Articles on Practical Natural History. With 11 Illustrations. Cr. 8vo., 3s. 6d.

Strange Dwellings: a Description of the Habitations of Animals, abridged from 'Homes without Hands'. With 60 Illustrations. Cr. 8vo., 3s. 6d.

Wood (Rev. J. G.)—*continued.*

Petland Revisited. With 33 Illustrations. Cr. 8vo., 3s. 6d.

Bird Life of the Bible. With 32 Illustrations. Cr. 8vo., 3s. 6d.

Wonderful Nests. With 30 Illustrations. Cr. 8vo., 3s. 6d.

Homes under the Ground. With 28 Illustrations. Cr. 8vo., 3s. 6d.

Wild Animals of the Bible. With 29 Illustrations. Cr. 8vo., 3s. 6d.

Domestic Animals of the Bible. With 23 Illustrations. Cr. 8vo., 3s. 6d.

The Branch Builders. With 28 Illustrations. Cr. 8vo., 2s. 6d.

Social Habitations and Parasitic Nests. With 18 Illustrations. Cr. 8vo., 2s.

Works of Reference.

Gwilt.—*An Encyclopædia of Architecture.* By Joseph Gwilt, F.S.A. Illustrated with more than 1100 Engravings on Wood. Revised (1888), with Alterations and Considerable Additions by Wyatt Papworth. 8vo, £2 12s. 6d.

Maunder (Samuel).

Biographical Treasury. With Supplement brought down to 1889. By Rev. James Wood. Fcp. 8vo., 6s.

Treasury of Geography, Physical, Historical, Descriptive, and Political. With 7 Maps and 16 Plates. Fcp. 8vo., 6s.

The Treasury of Bible Knowledge. By the Rev. J. Ayre, M.A. With 5 Maps, 15 Plates, and 300 Woodcuts. Fcp. 8vo., 6s.

Treasury of Knowledge and Library of Reference. Fcp. 8vo., 6s.

Historical Treasury. Fcp. 8vo., 6s.

Maunder (Samuel)—*continued.*

Scientific and Literary Treasury. Fcp. 8vo., 6s.

The Treasury of Botany. Edited by J. Lindley, F.R.S., and T. Moore, F.L.S. With 274 Woodcuts and 20 Steel Plates. 2 vols. Fcp. 8vo., 12s.

Roget. — *Thesaurus of English Words and Phrases.* Classified and Arranged so as to Facilitate the Expression of Ideas and assist in Literary Composition. By Peter Mark Roget, M.D., F.R.S. Recomposed throughout, enlarged and improved, partly from the Author's Notes, and with a full Index, by the Author's Son, John Lewis Roget. Crown 8vo., 10s. 6d.

Willich.—*Popular Tables* for giving information for ascertaining the value of Lifehold, Leasehold, and Church Property, the Public Funds, etc. By Charles M. Willich. Edited by H. Bence Jones. Crown 8vo., 10s. 6d.

Children's Books.

Buckland.—*Two Little Runaways.* Adapted from the French of Louis Desnoyers. By James Buckland. With 110 Illustrations by Cecil Aldin. Cr. 8vo., 6s.

Crake (Rev. A. D.).

Edwy the Fair; or, The First Chronicle of Æscendune. Cr. 8vo., 2s. 6d.

Alfgar the Dane; or, The Second Chronicle of Æscendune. Cr. 8vo. 2s. 6d.

Crake (Rev. A. D.)—*continued.*

The Rival Heirs: being the Third and Last Chronicle of Æscendune. Cr. 8vo., 2s. 6d.

The House of Walderne. A Tale of the Cloister and the Forest in the Days of the Barons' Wars. Crown 8vo., 2s. 6d.

Brian Fitz-Count. A Story of Wallingford Castle and Dorchester Abbey. Cr. 8vo., 2s. 6d.

Children's Books.—*continued.*

Henty.—*Yule Logs*: A Story-Book for Boys. Edited by G. A. Henty. With 61 Illustrations. Crown 8vo., cloth, gilt edges, 6s.

Lang (Andrew).—Edited by.

The Blue Fairy Book. With 138 Illustrations. Crown 8vo., 6s.

The Red Fairy Book. With 100 Illustrations. Crown 8vo., 6s.

The Green Fairy Book. With 99 Illustrations. Crown 8vo., 6s.

The Yellow Fairy Book. With 104 Illustrations. Crown 8vo., 6s.

The Pink Fairy Book. With 67 Illustrations. Crown 8vo., 6s.

The Blue Poetry Book. With 100 Illustrations. Crown 8vo., 6s.

The Blue Poetry Book. School Edition, without Illustrations. Fcp. 8vo., 2s. 6d.

The True Story Book. With 66 Illustrations. Crown 8vo., 6s.

The Red True Story Book. With 100 Illustrations. Crown 8vo., 6s.

The Animal Story Book. With 67 Illustrations. Crown 8vo., 6s.

The Arabian Nights Entertainments. With 66 Illustrations. Crown 8vo., 6s.

Meade (L. T.).

Daddy's Boy. With 8 Illustrations. Crown 8vo., 3s. 6d.

Deb and the Duchess. With 7 Illustrations. Crown 8vo., 3s. 6d.

The Beresford Prize. With 7 Illustrations. Crown 8vo., 3s. 6d.

The House of Surprises. With 6 Illustrations. Crown 8vo. 3s. 6d.

Praeger (Rosamond).

The Adventures of the Three Bold Babes: Hector, Honoria and Alisander. A Story in Pictures. With 24 Coloured Plates and 24 Outline Pictures. Oblong 4to., 3s. 6d.

The Further Doings of the Three Bold Babies. With 24 Coloured Pictures and 24 Outline Pictures. Oblong 4to., 3s. 6d.

Stevenson.—*A Child's Garden of Verses.* By Robert Louis Stevenson. Fcp. 8vo., 5s.

Sullivan.—*Here They Are!* More Stories. Written and Illustrated by Jas. F. Sullivan. Crown 8vo., 6s.

Upton (Florence K. and Bertha).

The Adventures of Two Dutch Dolls and a 'Golliwogg'. With 31 Coloured Plates and numerous Illustrations in the Text. Oblong 4to., 6s.

The Golliwogg's Bicycle Club. With 31 Coloured Plates and numerous Illustrations in the Text. Oblong 4to., 6s.

The Golliwogg at the Seaside. With 31 Coloured Plates and numerous Illustrations in the Text. Oblong 4to., 6s.

The Vege-Men's Revenge. With 31 Coloured Plates and numerous Illustrations in the Text. Oblong 4to., 6s.

Wordsworth.—*The Snow Garden, and other Fairy Tales for Children.* By Elizabeth Wordsworth. With 10 Illustrations by Trevor Haddon. Crown 8vo., 3s. 6d.

Longmans' Series of Books for Girls.

Price 2s. 6d. each.

Atelier (The) du Lys: or, an Art Student in the Reign of Terror.

By the same Author.

Mademoiselle Mori: a Tale of Modern Rome.
In the Olden Time: a Tale of the Peasant War in Germany.
A Younger Sister.
That Child.
Under a Cloud.
Hester's Venture
The Fiddler of Lugau.
A Child of the Revolution.

Atherstone Priory. By L. N. Comyn.

The Story of a Spring Morning, etc. By Mr. Molesworth. Illustrated.

The Palace in the Garden. By Mrs. Molesworth. Illustrated.

Neighbours. By Mrs. Molesworth.

The Third Miss St. Quentin. By Mrs. Molesworth.

Very Young; and Quite Another Story. Two Stories. By Jean Ingelow.

Can this be Love? By Louisa Parr.

Keith Deramore. By the Author of 'Miss Molly'.

Sidney. By Margaret Deland.

An Arranged Marriage. By Dorothea Gerard.

Last Words to Girls on Life at School and after School. By Maria Grey.

Stray Thoughts for Girls. By Lucy H. M. Soulsby. 16mo., 1s. 6d. net.

The Silver Library,

CROWN 8VO. 3s. 6d. EACH VOLUME.

Arnold's (Sir Edwin) Seas and Lands. With 71 Illustrations. 3s. 6d.

Bagehot's (W.) Biographical Studies. 3s. 6d.

Bagehot's (W.) Economic Studies. 3s. 6d.

Bagehot's (W.) Literary Studies. With Portrait. 3 vols, 3s. 6d. each.

Baker's (Sir S. W.) Eight Years in Ceylon. With 6 Illustrations. 3s. 6d.

Baker's (Sir S. W.) Rifle and Hound in Ceylon. With 6 Illustrations. 3s. 6d.

Baring-Gould's (Rev. S.) Curious Myths of the Middle Ages. 3s. 6d.

Baring-Gould's (Rev. S.) Origin and Development of Religious Belief. 2 vols. 3s. 6d. each.

Becker's (W. A.) Gallus: or, Roman Scenes in the Time of Augustus. With 26 Illus. 3s. 6d.

Becker's (W. A.) Charicles: or, Illustrations of the Private Life of the Ancient Greeks. With 26 Illustrations. 3s. 6d.

Bent's (J. T.) The Ruined Cities of Mashonaland. With 117 Illustrations. 3s. 6d.

Brassey's (Lady) A Voyage in the 'Sunbeam'. With 66 Illustrations. 3s. 6d.

Churchill's (W. S.) The Story of the Malakand Field Force, 1897. With 6 Maps and Plans. 3s. 6d.

Clodd's (E.) Story of Creation: a Plain Account of Evolution. With 77 Illustrations. 3s. 6d.

Conybeare (Rev. W. J.) and Howson's (Very Rev. J. S.) Life and Epistles of St. Paul. With 46 Illustrations. 3s. 6d.

Dougall's (L.) Beggars All: a Novel. 3s. 6d.

Doyle's (A. Conan) Micah Clarke. A Tale of Monmouth's Rebellion. With 10 Illusts. 3s. 6d.

Doyle's (A. Conan) The Captain of the Polestar, and other Tales. 3s. 6d.

Doyle's (A. Conan) The Refugees: A Tale of the Huguenots. With 25 Illustrations. 3s 6d.

Doyle's (A. Conan) The Stark Munro Letters. 3s. 6d.

Froude's (J. A.) The History of England, from the Fall of Wolsey to the Defeat of the Spanish Armada. 12 vols. 3s. 6d. each.

Froude's (J. A.) The English in Ireland. 3 vols. 10s. 6d.

Froude's (J. A.) The Divorce of Catherine of Aragon. 3s. 6d.

Froude's (J. A.) The Spanish Story of the Armada, and other Essays. 3s. 6d.

Froude's (J. A.) Short Studies on Great Subjects. 4 vols. 3s. 6d. each.

Froude's (J. A.) Oceana, or England and Her Colonies. With 9 Illustrations. 3s. 6d.

Froude's (J. A.) The Council of Trent. 3s. 6d.

Froude's (J. A.) Thomas Carlyle: a History of his Life.
1795-1835. 2 vols. 7s. 1834-1881. 2 vols. 7s.

Froude's (J. A.) Cæsar: a Sketch. 3s. 6d.

Froude's (J. A.) The Two Chiefs of Dunboy: an Irish Romance of the Last Century. 3s. 6d.

Gleig's (Rev. G. R.) Life of the Duke of Wellington. With Portrait. 3s. 6d.

Greville's (C. C. F.) Journal of the Reigns of King George IV., King William IV., and Queen Victoria. 8 vols., 3s. 6d. each.

Haggard's (H. R.) She: A History of Adventure. With 32 Illustrations. 3s. 6d.

Haggard's (H. R.) Allan Quatermain. With 20 Illustrations. 3s. 6d.

Haggard's (H. R.) Colonel Quaritch, V.C.: a Tale of Country Life. With Frontispiece and Vignette. 3s. 6d.

Haggard's (H. R.) Cleopatra. With 29 Illustrations. 3s. 6d.

Haggard's (H. R.) Eric Brighteyes. With 51 Illustrations. 3s. 6d.

Haggard's (H. R.) Beatrice. With Frontispiece and Vignette. 3s. 6d.

Haggard's (H. R.) Allan's Wife. With 34 Illustrations. 3s. 6d.

Haggard (H. R.) Heart of the World. With 15 Illustrations. 3s. 6d.

Haggard's (H. R.) Montezuma's Daughter. With 25 Illustrations. 3s. 6d.

Haggard's (H. R.) The Witch's Head. With 16 Illustrations. 3s. 6d.

Haggard's (H. R.) Mr. Meeson's Will. With 16 Illustrations. 3s. 6d.

Haggard's (H. R.) Nada the Lily. With 23 Illustrations. 3s. 6d.

Haggard's (H. R.) Dawn. With 16 Illusts. 3s. 6d.

Haggard's (H. R.) The People of the Mist. With 16 Illustrations. 3s. 6d.

Haggard's (H. R.) Joan Haste. With 20 Illustrations. 3s. 6d.

Haggard (H. R.) and Lang's (A.) The World's Desire. With 27 Illustrations. 3s. 6d.

Harte's (Bret) In the Carquinez Woods and other Stories. 3s. 6d.

Helmholtz's (Hermann von) Popular Lectures on Scientific Subjects. With 68 Illustrations. 2 vols. 3s. 6d. each.

Hornung's (E. W.) The Unbidden Guest. 3s. 6d.

Howitt's (W.) Visits to Remarkable Places. With 80 Illustrations. 3s. 6d.

Jefferies' (R.) The Story of My Heart: My Autobiography. With Portrait. 3s. 6d.

Jefferies' (R.) Field and Hedgerow. With Portrait. 3s. 6d.

Jefferies' (R.) Red Deer. With 17 Illusts. 3s. 6d.

Jefferies' (R.) Wood Magic: a Fable. With Frontispiece and Vignette by E. V. B. 3s. 6d.

Jefferies (R.) The Toilers of the Field. With Portrait from the Bust in Salisbury Cathedral. 3s. 6d.

Kaye (Sir J.) and Malleson's (Colonel) History of the Indian Mutiny of 1857-8. 6 vols. 3s. 6d. each.

Knight's (E. F.) The Cruise of the 'Alerte': the Narrative of a Search for Treasure on the Desert Island of Trinidad. With 2 Maps and 23 Illustrations. 3s. 6d.

Knight's (E. F.) Where Three Empires Meet: a Narrative of Recent Travel in Kashmir, Western Tibet, Baltistan, Gilgit. With a Map and 54 Illustrations. 3s. 6d.

Knight's (E. F.) The 'Falcon' on the Baltic: a Coasting Voyage from Hammersmith to Copenhagen in a Three-Ton Yacht. With Map and 11 Illustrations. 3s. 6d.

Köstlin's (J.) Life of Luther. With 62 Illustrations and 4 Facsimiles of MSS. 3s. 6d.

Lang's (A.) Angling Sketches. With 20 Illustrations. 3s. 6d.

Lang's (A.) Custom and Myth: Studies of Early Usage and Belief. 3s. 6d.

Lang's (A.) Cock Lane and Common-Sense. 3s. 6d.

The Silver Library—*continued.*

Lang's (A.) A Monk of Fife: a Story of the Days of Joan of Arc. With 13 Illusts. 3*s.* 6*d.*

Lang's (A.) Myth, Ritual, and Religion. 2 vols. 7*s.*

Lees (J. A.) and Clutterbuck's (W. J.) B. C. 1887, A Ramble in British Columbia. With Maps and 75 Illustrations. 3*s.* 6*d*

Levett-Yeats' (S.) The Chevalier D'Auriac. 3*s.* 6*d.*

Macaulay's (Lord) Complete Works. 'Albany' Edition. With 12 Portraits. 12 vols. 3*s.* 6*d.* each.

Macaulay's (Lord) Essays and Lays of Ancient Rome, etc. With Portrait and 4 Illustrations to the 'Lays'. 3*s.* 6*d.*

Macleod's (H. D.) Elements of Banking. 3*s.* 6*d.*

Marbot's (Baron de) Memoirs. Translated. 2 vols. 7*s.*

Marshman's (J. C.) Memoirs of Sir Henry Havelock. 3*s.* 6*d.*

Merivale's (Dean) History of the Romans under the Empire. 8 vols. 3*s.* 6*d.* each.

Merriman's (H. S.) Flotsam: A Tale of the Indian Mutiny. 3*s.* 6*d.*

Mill's (J. S.) Political Economy. 3*s.* 6*d.*

Mill's (J. S.) System of Logic. 3*s.* 6*d.*

Milner's (Geo.) Country Pleasures: the Chronicle of a Year chiefly in a Garden. 3*s.* 6*d.*

Nansen's (F.) The First Crossing of Greenland. With 142 Illustrations and a Map. 3*s.* 6*d.*

Phillipps-Wolley's (C.) Snap: a Legend of the Lone Mountain With 13 Illustrations. 3*s.* 6*d.*

Proctor's (R. A.) The Orbs Around Us. 3*s.* 6*d.*

Proctor's (R. A.) The Expanse of Heaven. 3*s.* 6*d.*

Proctor's (R. A.) Light Science for Leisure Hours. First Series. 3*s.* 6*d.*

Proctor's (R. A.) The Moon. 3*s.* 6*d.*

Proctor's (R. A.) Other Worlds than Ours. 3*s.*6*d.*

Proctor's (R. A.) Our Place among Infinities: a Series of Essays contrasting our Little Abode in Space and Time with the Infinities around us. 3*s.* 6*d.*

Proctor's (R. A.) Other Suns than Ours. 3*s.* 6*d.*

Proctor's (R. A.) Rough Ways made Smooth. 3*s.* 6*d.*

Proctor's (R. A.) Pleasant Ways in Science. 3*s.*6*d.*

Proctor's (R. A.) Myths and Marvels of Astronomy. 3*s.* 6*d.*

Proctor's (R. A.) Nature Studies. 3*s.* 6*d.*

Proctor's (R. A.) Leisure Readings. By R. A. PROCTOR, EDWARD CLODD, ANDREW WILSON, THOMAS FOSTER, and A. C. RANYARD. With Illustrations. 3*s.* 6*d.*

Rossetti's (Maria F.) A Shadow of Dante. 3*s.* 6*d.*

Smith's (R. Bosworth) Carthage and the Carthaginians. With Maps, Plans, etc. 3*s.* 6*d.*

Stanley's (Bishop) Familiar History of Birds. With 160 Illustrations. 3*s.* 6*d.*

Stephen's (L.) The Playground of Europe (The Alps). With 4 Illustrations. 3*s.* 6*d.*

Stevenson's (R. L.) The Strange Case of Dr. Jekyll and Mr. Hyde; with other Fables. 3*s.*6*d.*

Stevenson (R. L.) and Osbourne's (Ll.) The Wrong Box. 3*s.* 6*d.*

Stevenson (Robert Louis) and Stevenson's (Fanny van de Grift) More New Arabian Nights.—The Dynamiter. 3*s.* 6*d.*

Weyman's (Stanley J.) The House of the Wolf: a Romance. 3*s.* 6*d.*

Wood's (Rev. J. G.) Petland Revisited. With 33 Illustrations. 3*s.* 6*d.*

Wood's (Rev. J. G.) Strange Dwellings. With 60 Illustrations. 3*s.* 6*d.*

Wood's (Rev. J. G.) Out of Doors. With 11 Illustrations. 3*s.* 6*d.*

Cookery, Domestic Management, &c.

Acton. — *MODERN COOKERY.* By ELIZA ACTON. With 150 Woodcuts. Fcp. 8vo., 4*s.* 6*d.*

Ashby.—*HEALTH IN THE NURSERY.* By HENRY ASHBY, M.D., F.R.C.P., Physician to the Manchester Children's Hospital, and Lecturer on the Diseases of Children at the Owens College. With 25 Illustrations. Crown 8vo., 3*s.* 6*d.*

Buckton.—*COMFORT AND CLEANLINESS:* The Servant and Mistress Question. By Mrs. CATHERINE M. BUCKTON, late Member of the Leeds School Board. With 14 Illustrations. Crown 8vo., 2*s.*

Bull (THOMAS, M.D.).

HINTS TO MOTHERS ON THE MANAGEMENT OF THEIR HEALTH DURING THE PERIOD OF PREGNANCY. Fcp. 8vo., 1*s.* 6*d.*

THE MATERNAL MANAGEMENT OF CHILDREN IN HEALTH AND DISEASE. Fcp. 8vo., 1*s.* 6*d.*

De Salis (MRS.).

CAKES AND CONFECTIONS À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

DOGS: A Manual for Amateurs. Fcp. 8vo., 1*s.* 6*d.*

De Salis (MRS.).—*continued.*

DRESSED GAME AND POULTRY À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

DRESSED VEGETABLES À LA MODE. Fcp. 8vo., 1*s* 6*d.*

DRINKS À LA MODE. Fcp. 8vo., 1*s.*6*d.*

ENTRÉES À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

FLORAL DECORATIONS. Fcp. 8vo., 1*s.* 6*d.*

GARDENING À LA MODE. Fcp. 8vo. Part I., Vegetables, 1*s.* 6*d.* Part II., Fruits, 1*s.* 6*d.*

NATIONAL VIANDS À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

NEW-LAID EGGS. Fcp. 8vo., 1*s.* 6*d.*

OYSTERS À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

SOUPS AND DRESSED FISH À LA MODE. Fcp. 8vo., 1*s.* 6*d.*

SAVOURIES À LA MODE. Fcp. 8vo., 1*s.*6*d.*

PUDDINGS AND PASTRY À LA MODE Fcp. 8vo., 1*s.* 6*d.*

Cookery, Domestic Management, &c.—*continued.*

De Salis (MRS.)—*continued.*

SWEETS AND SUPPER DISHES À LA MODE. Fcp. 8vo., 1s. 6d.

TEMPTING DISHES FOR SMALL INCOMES. Fcp. 8vo., 1s. 6d.

WRINKLES AND NOTIONS FOR EVERY HOUSEHOLD. Crown 8vo., 1s. 6d.

Lear.—*MAIGRE COOKERY.* By H. L. SIDNEY LEAR. 16mo., 2s.

Mann.—*MANUAL OF THE PRINCIPLES OF PRACTICAL COOKERY.* By E. E. MANN. Crown 8vo.

Poole.—*COOKERY FOR THE DIABETIC.* By W. H. and Mrs. POOLE. With Preface by Dr. PAVY. Fcp. 8vo., 2s. 6d.

Walker (JANE H.).

A BOOK FOR EVERY WOMAN.
Part I., The Management of Children in Health and out of Health. Crown 8vo., 2s. 6d.
Part II. Woman in Health and out of Health. Crown 8vo., 2s. 6d.

A HANDBOOK FOR MOTHERS: being Simple Hints to Women on the Management of their Health during Pregnancy and Confinement, together with Plain Directions as to the Care of Infants. Crown 8vo., 2s. 6d.

Miscellaneous and Critical Works.

Armstrong.—*ESSAYS AND SKETCHES.* By EDMUND J. ARMSTRONG. Fcp. 8vo., 5s.

Bagehot.—*LITERARY STUDIES.* By WALTER BAGEHOT. With Portrait. 3 vols. Crown 8vo., 3s. 6d. each.

Baring-Gould.—*CURIOUS MYTHS OF THE MIDDLE AGES.* By Rev. S. BARING-GOULD. Crown 8vo., 3s. 6d.

Baynes. — *SHAKESPEARE STUDIES,* and other Essays. By the late THOMAS SPENCER BAYNES, LL.B., LL.D. With a Biographical Preface by Professor LEWIS CAMPBELL. Crown 8vo., 7s. 6d.

Boyd (A. K. H.) ('A.K.H.B.').

And see MISCELLANEOUS THEOLOGICAL WORKS, p. 32.

AUTUMN HOLIDAYS OF A COUNTRY PARSON. Crown 8vo., 3s. 6d.

COMMONPLACE PHILOSOPHER. Cr. 8vo., 3s. 6d.

CRITICAL ESSAYS OF A COUNTRY PARSON. Crown 8vo., 3s. 6d.

EAST COAST DAYS AND MEMORIES. Crown 8vo., 3s. 6d.

LANDSCAPES, CHURCHES, AND MORALITIES. Crown 8vo., 3s. 6d.

LEISURE HOURS IN TOWN. Crown 8vo., 3s. 6d.

LESSONS OF MIDDLE AGE. Crown 8vo., 3s. 6d.

OUR LITTLE LIFE. Two Series. Crown 8vo., 3s. 6d. each.

OUR HOMELY COMEDY: AND TRAGEDY. Crown 8vo., 3s. 6d.

RECREATIONS OF A COUNTRY PARSON. Three Series. Crown 8vo., 3s. 6d. each.

Butler (SAMUEL).

EREWHON. Crown 8vo., 5s.

THE FAIR HAVEN. A Work in Defence of the Miraculous Element in our Lord's Ministry. Cr. 8vo., 7s. 6d.

LIFE AND HABIT. An Essay after a Completer View of Evolution. Cr. 8vo., 7s. 6d.

EVOLUTION, OLD AND NEW. Cr. 8vo., 10s. 6d.

ALPS AND SANCTUARIES OF PIEDMONT AND CANTON TICINO. Illustrated. Pott 4to., 10s. 6d.

LUCK, OR CUNNING, AS THE MAIN MEANS OF ORGANIC MODIFICATION? Cr. 8vo., 7s. 6d.

EX VOTO. An Account of the Sacro Monte or New Jerusalem at Varallo-Sesia. Crown 8vo., 10s. 6d.

SELECTIONS FROM WORKS, with Remarks on Mr. G. J. Romanes' 'Mental Evolution in Animals,' and a Psalm of Montreal. Crown 8vo., 7s. 6d.

THE AUTHORESS OF THE ODYSSEY, WHERE AND WHEN SHE WROTE, WHO SHE WAS, THE USE SHE MADE OF THE ILIAD, AND HOW THE POEM GREW UNDER HER HANDS. With 14 Illustrations. 8vo., 10s. 6d.

THE ILIAD OF HOMER. Rendered into English Prose for the use of those who cannot read the original. Crown 8vo., 7s. 6d.

Miscellaneous and Critical Works—*continued.*

CHARITIES REGISTER, THE ANNUAL, AND DIGEST: being a Classified Register of Charities in or available in the Metropolis. With an Introduction by C. S. LOCH, Secretary to the Council of the Charity Organisation Society, London. 8vo., 4s.

Comparetti. — *THE TRADITIONAL POETRY OF THE FINNS.* By DOMENICO COMPARETTI. Translated by ISABELLA M. ANDERTON. With Introduction by ANDREW LANG. 8vo., 16s.

Dreyfus.—*LECTURES ON FRENCH LITERATURE.* By IRMA DREYFUS. Large crown 8vo., 12s. 6d.

Evans.—*THE ANCIENT STONE IMPLEMENTS, WEAPONS AND ORNAMENTS OF GREAT BRITAIN.* By Sir JOHN EVANS, K.C.B., D.C.L., LL.D., F.R.S., etc. With 537 Illustrations. Medium 8vo., 28s.

Hamlin.—*A TEXT-BOOK OF THE HISTORY OF ARCHITECTURE.* By A. D. F. HAMLIN, A.M. With 229 Illustrations. Crown 8vo., 7s. 6d.

Haweis.—*MUSIC AND MORALS.* By the Rev. H. R. HAWEIS. With Portrait of the Author, and numerous Illustrations, Facsimiles, and Diagrams. Cr. 8vo., 7s. 6d.

Hime.—*STRAY MILITARY PAPERS.* By Lieut.-Colonel H. W. L. HIME (late Royal Artillery). 8vo, 7s. 6d.

Hoenig.—*INQUIRIES CONCERNING THE TACTICS OF THE FUTURE.* Fourth Edition, 1894, of the 'Two Brigades'. By FRITZ HOENIG. With 1 Sketch in the Text and 5 Maps. Translated by Captain H. M. BOWER. 8vo., 15s. net.

Hullah.—*THE HISTORY OF MODERN MUSIC.* By JOHN HULLAH. 8vo., 8s. 6d.

Jefferies (RICHARD).

FIELD AND HEDGEROW: With Portrait. Crown 8vo., 3s. 6d.

THE STORY OF MY HEART: my Autobiography. With Portrait and New Preface by C. J. LONGMAN. Cr. 8vo., 3s. 6d.

RED DEER. With 17 Illustrations. Crown 8vo., 3s. 6d.

THE TOILERS OF THE FIELD. With Portrait from the Bust in Salisbury Cathedral. Crown 8vo., 3s. 6d.

WOOD MAGIC: a Fable. With Frontispiece and Vignette by E. V. B. Crown 8vo., 3s. 6d.

Jekyll.—*WOOD AND GARDEN:* Notes and Thoughts, Practical and Critical, of a Working Amateur. By GERTRUDE JEKYLL. With 71 Illustrations from Photographs by the Author. 8vo., 10s. 6d. net.

Johnson.—*THE PATENTEE'S MANUAL:* a Treatise on the Law and Practice of Letters Patent. By J. & J. H. JOHNSON, Patent Agents, etc. 8vo., 10s. 6d.

Joyce.—*THE ORIGIN AND HISTORY OF IRISH NAMES OF PLACES.* By P. W. JOYCE, LL.D. 2 vols. Crown 8vo., 5s. each.

Kingsley.—*A HISTORY OF FRENCH ART,* 1100-1899. By ROSE G. KINGSLEY. 8vo., 1s. 6d. net.

Lang (ANDREW).

THE MAKING OF RELIGION. 8vo., 12s.

MODERN MYTHOLOGY: a Reply to Professor Max Müller. 8vo., 9s.

LETTERS TO DEAD AUTHORS. Fcp. 8vo., 2s. 6d. net.

BOOKS AND BOOKMEN. With 2 Coloured Plates and 17 Illustrations. Fcp. 8vo., 2s. 6d. net.

OLD FRIENDS. Fcp. 8vo., 2s. 6d. net.

LETTERS ON LITERATURE. Fcp. 8vo., 2s. 6d. net.

ESSAYS IN LITTLE. With Portrait of the Author. Crown 8vo., 2s. 6d.

COCK LANE AND COMMON-SENSE. Crown 8vo., 3s. 6d.

THE BOOK OF DREAMS AND GHOSTS. Crown 8vo., 6s.

Macfarren. — *LECTURES ON HARMONY.* By Sir GEORGE A. MACFARREN. 8vo., 12s.

Madden.—*THE DIARY OF MASTER WILLIAM SILENCE:* a Study of Shakespeare and Elizabethan Sport. By the Right Hon. D. H. MADDEN, Vice-Chancellor of the University of Dublin. 8vo., 16s.

Marquand and Frothingham.—*A TEXT-BOOK OF THE HISTORY OF SCULPTURE.* By ALLAN MARQUAND, Ph.D., and ARTHUR L. FROTHINGHAM, Junr., Ph.D., Professors of Archæology and the History of Art in Princetown University. With 113 Illustrations. Crown 8vo., 6s.

Max Müller (The Right Hon. F.).

INDIA: WHAT CAN IT TEACH US? Crown 8vo., 5s.

CHIPS FROM A GERMAN WORKSHOP.

Vol. I. Recent Essays and Addresses. Crown 8vo., 5s.

Vol. II. Biographical Essays. Crown 8vo., 5s.

Vol. III. Essays on Language and Literature. Crown 8vo., 5s.

Vol. IV. Essays on Mythology and Folk Lore. Crown 8vo., 5s.

CONTRIBUTIONS TO THE SCIENCE OF MYTHOLOGY. 2 vols. 8vo., 32s.

Miscellaneous and Critical Works—*continued.*

Milner.—*Country Pleasures:* the Chronicle of a Year chiefly in a Garden. By George Milner. Crown 8vo., 3*s.* 6*d.*

Morris (William).

Signs of Change. Seven Lectures delivered on various Occasions. Post 8vo., 4*s.* 6*d.*

Hopes and Fears for Art. Five Lectures delivered in Birmingham, London, etc., in 1878-1881. Cr 8vo., 4*s.* 6*d.*

An Address delivered at the Distribution of Prizes to Students of the Birmingham Municipal School of Art on 21st February, 1894. 8vo., 2*s.* 6*d.* net.

Art and the Beauty of the Earth: a Lecture delivered at Burslem Town Hall, on October 13, 1881. 8vo., 2*s.* 6*d.* net.

Orchard.—*The Astronomy of 'Milton's Paradise Lost'.* By Thomas N. Orchard, M.D., Member of the British Astronomical Association. With 13 Illustrations. 8vo., 6*s.* net.

Poore (George Vivian), M.D., F.R.C.P.

Essays on Rural Hygiene. With 13 Illustrations. Crown 8vo., 6*s.* 6*d.*

The Dwelling House. With 36 Illustrations. Crown 8vo., 3*s.* 6*d.*

Richmond.—*Boyhood:* a Plea for Continuity in Education. By Ennis Richmond. Crown 8vo., 2*s.* 6*d.*

Richter. — *Lectures on the National Gallery.* By J. P. Richter. With 20 Plates and 7 Illustrations in the Text. Crown 4to., 9*s.*

Rossetti.—*A Shadow of Dante:* being an Essay towards studying Himself, his World and his Pilgrimage. By Maria Francesca Rossetti. With Frontispiece by Dante Gabriel Rossetti. Crown 8vo., 3*s.* 6*d.*

Shadwell. — *The London Water Supply.* By Arthur Sadwell, M.A., M.B. Oxon., Member of the Royal College of Physicians. Crown 8vo., 5*s.*

Solovyoff.—*A Modern Priestess of Isis* (*Madame Blavatsky*). Abridged and Translated on Behalf of the Society for Psychical Research from the Russian of Vsevolod Sergyeevich Solovyoff. By Walter Leaf, Litt.D. With Appendices. Crown 8vo., 6*s.*

Soulsby (Lucy H. M.).

Stray Thoughts on Reading. Small 8vo, 2*s.* 6*d.* net.

Stray Thoughts for Girls. 16mo., 1*s.* 6*d.* net.

Stray Thoughts for Mothers and Teachers. Fcp. 8vo., 2*s.* 6*d.* net.

Stray Thoughts for Invalids. 16mo., 2*s.* net.

Southey.—*The Correspondence of Robert Southey with Caroline Bowles.* Edited, with an Introduction, by Edward Dowden, LL.D. 8vo., 14*s.*

Stevens.—*On the Stowage of Ships and their Cargoes.* With Information regarding Freights, Charter-Parties, etc. By Robert White Stevens, Associate-Member of the Institute of Naval Architects. 8vo., 21*s.*

Turner and Sutherland.—*The Development of Australian Literature.* By Henry Gyles Turner and Alexander Sutherland. With Portraits and Illustrations. Crown 8vo., 5*s.*

Tyszkiewicz. — *Memories of an Old Collector.* By Count Michael Tyszkiewicz. Translated from the French by Mrs. Andrew Lang. With 9 Plates. Crown 8vo., 6*s.*

Van Dyke.—*A Text-Book on the History of Painting.* By John C. Van Dyke, Professor of the History of Art in Rutgers College, U.S. With 110 Illustrations. Crown 8vo, 6*s.*

Warwick.—*Progress in Women's Education in the British Empire:* being the Report of Conferences and a Congress held in connection with the Educational Section, Victorian Era Exhibition. Edited by the Countess of Warwick. Cr. 8vo. 6*s.*

White.—*An Examination of the Charge of Apostacy against Wordsworth.* By W. Hale White, Editor of the 'Description of the Wordsworth and Coleridge MSS. in the Possession of Mr. T. Norton Longman'. Crown 8vo., 3*s.* 6*d.*

Willard. — *History of Modern Italian Art.* By Ashton Follins Willard. With Photogravure Frontispiece and 28 Full-page Illustrations. 8vo., 18*s.* net.

Miscellaneous Theological Works.

*** For Church of England and Roman Catholic Works see* MESSRS. LONGMANS & CO.'s *Special Catalogues.*

Balfour. — *THE FOUNDATIONS OF BELIEF:* being Notes Introductory to the Study of Theology. By the Right Hon. ARTHUR J. BALFOUR, M.P. 8vo., 12s. 6d.

Bird (ROBERT).

A CHILD'S RELIGION. Cr. 8vo., 2s.

JOSEPH, THE DREAMER. Crown 8vo., 5s.

JESUS, THE CARPENTER OF NAZARETH. Crown 8vo., 5s.

To be had also in Two Parts, price 2s. 6d. each.

Part I. GALILEE AND THE LAKE OF GENNESARET.

Part II. JERUSALEM AND THE PERÆA.

Boyd (A. K. H.) **('A.K.H.B.').**

OCCASIONAL AND IMMEMORIAL DAYS: Discourses. Crown 8vo., 7s. 6d.

COUNSEL AND COMFORT FROM A CITY PULPIT. Crown 8vo., 3s. 6d.

SUNDAY AFTERNOONS IN THE PARISH CHURCH OF A SCOTTISH UNIVERSITY CITY. Crown 8vo., 3s. 6d.

CHANGED ASPECTS OF UNCHANGED TRUTHS. Crown 8vo., 3s. 6d.

GRAVER THOUGHTS OF A COUNTRY PARSON. Three Series. Crown 8vo., 3s. 6d. each.

PRESENT DAY THOUGHTS. Crown 8vo., 3s. 6d.

SEASIDE MUSINGS. Cr. 8vo., 3s. 6d.

'TO MEET THE DAY' through the Christian Year: being a Text of Scripture, with an Original Meditation and a Short Selection in Verse for Every Day. Crown 8vo., 4s. 6d.

Campbell.—*RELIGION IN GREEK LITERATURE.* By the Rev. LEWIS CAMPBELL, M.A., LL.D., Emeritus Professor of Greek, University of St. Andrews. 8vo., 15s.

Davidson.—*THEISM,* as Grounded in Human Nature, Historically and Critically Handled. Being the Burnett Lectures for 1892 and 1893, delivered at Aberdeen. By W. L. DAVIDSON, M.A., LL.D. 8vo., 15s.

Gibson.—*THE ABBÉ DE LAMENNAIS. AND THE LIBERAL CATHOLIC MOVEMENT IN FRANCE.* By the Hon. W. GIBSON. With Portrait. 8vo., 12s. 6d.

Lang.—*THE MAKING OF RELIGION.* By ANDREW LANG. 8vo., 12s.

MacDonald (GEORGE).

UNSPOKEN SERMONS. Three Series. Crown 8vo., 3s. 6d. each.

THE MIRACLES OF OUR LORD. Crown 8vo., 3s. 6d.

Martineau (JAMES).

HOURS OF THOUGHT ON SACRED THINGS: Sermons, 2 vols. Crown 8vo. 3s. 6d. each.

ENDEAVOURS AFTER THE CHRISTIAN LIFE. Discourses. Crown 8vo., 7s. 6d.

THE SEAT OF AUTHORITY IN RELIGION. 8vo., 14s.

ESSAYS, REVIEWS, AND ADDRESSES. 4 Vols. Crown 8vo., 7s. 6d. each.

HOME PRAYERS, with *TWO SERVICES* for Public Worship. Crown 8vo., 3s. 6d.

Max Müller (F.).

THE ORIGIN AND GROWTH OF RELIGION, as illustrated by the Religions of India. The Hibbert Lectures, delivered at the Chapter House, Westminster Abbey, in 1878. Crown 8vo., 5s.

INTRODUCTION TO THE SCIENCE OF RELIGION: Four Lectures delivered at the Royal Institution. Crown 8vo., 5s.

NATURAL RELIGION. The Gifford Lectures, delivered before the University of Glasgow in 1888. Crown 8vo., 5s.

PHYSICAL RELIGION. The Gifford Lectures, delivered before the University of Glasgow in 1890. Crown 8vo., 5s.

ANTHROPOLOGICAL RELIGION. The Gifford Lectures, delivered before the University of Glasgow in 1891. Cr. 8vo., 5s.

THEOSOPHY, OR PSYCHOLOGICAL RELIGION. The Gifford Lectures, delivered before the University of Glasgow in 1892. Crown 8vo., 5s.

THREE LECTURES ON THE VEDÂNTA PHILOSOPHY, delivered at the Royal Institution in March, 1894. 8vo., 5s.

RÂMAKRISHNA: HIS LIFE AND SAYINGS. Crown 8vo., 5s.

Romanes.—*THOUGHTS ON RELIGION.* By GEORGE J. ROMANES, LL.D., F.R.S. Crown 8vo., 4s. 6d.

Vivekananda.—*YOGA PHILOSOPHY:* Lectures delivered in New York, Winter of 1895-96, by the SWAMI VIVEKANANDA, on Raja Yoga; or, Conquering the Internal Nature; also Patanjali's Yoga Aphorisms, with Commentaries. Crown 8vo, 3s. 6d.

00059257

Digitized with financial assistance from

HT Parekh FOUNDATION

An Initiative by HDFC

WITH YOU, RIGHT THROUGH

on 27 November, 2018